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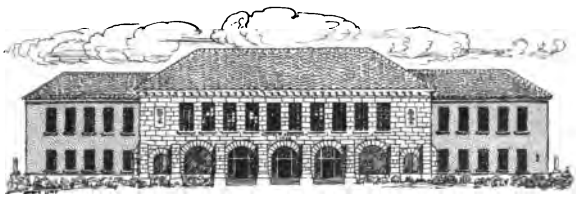

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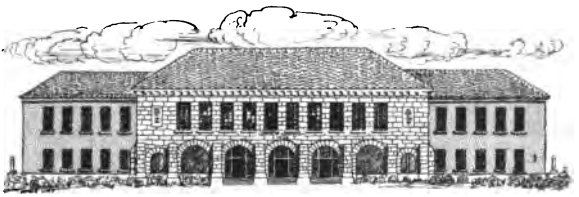

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AT HOME AND AT SCHOOL.

PART I.

LESSON I.

FRED'S BOAT ON THE POND.

Fred asked his father when they reached home from school if the girls could go with him to sail his new boat on the pond.

"Certainly," said Mr. Cartmell, "and I will go with you, too; we will play at **trade.**"

"What sort of a game is that?" asked Florence, Fred's oldest sister, about eight years of age. "I have never heard of it before."

"Have I not seen you, Fred and Nellie, play store?" asked her father.

"Oh, yes," cried Nellie, clapping her hands; "I remember we played store

FRED.

at my birthday-party, when I was six years old."

"Well," said Mr. Cartmell, "**the game** of **trade** is something like the game of

store, only it is for larger boys and girls to play."

"And men, too?" asked Fred, who was a bright boy. "Is it not what you play at all day when you go to town?"

"Call it play, if you prefer," said his father; "but I find it hard work."

"How shall we play the new game?" asked Florence and the others.

Their father told them to wait and see. Then he took some pieces of cotton and put them in a bag. In another bag he put some wheat; in other bags, nuts, pieces of silk, tea, and coffee.

Fred went into the house and brought out his boat, which he called the "Flyer" because it would sail so fast.

When they came to Spy Pond, the father told Fred he might get his boat ready to sail. So Fred set the sails of his boat and put small red flags on both of the masts to make them look grand.

"Now, Fred," said Mr. Cartmell, "you can go to the other side of the pond and play that you are living across the ocean, in another land. You can take these bags with you."

Fred ran round the pond so as to be there before his boat.

"What are you going to do, Papa?" asked Nellie.

"We have in this country a great deal of cotton, so I will load the 'Flyer' first

THE CARTMELLS AT SPY POND.

with cotton to send to Fred, who is supposed to live in a country on the other side where they have no cotton."

After the cotton was put in the boat it was pushed off by Florence. The wind filled the sails, and it moved rapidly toward the middle of the pond.

At last the wind ceased to blow, and the small ship did not move. Poor Fred, who had now reached the other side, thought he might not get his boat back; but soon a breeze rose and took it to where he stood.

"When ships sail on the sea," said Mr. Cartmell, "they may stop for want of wind to blow on their sails; that is known as a calm. As most ships are now moved by steam, they do not need the wind. There," he continued, "now your boat has come to the **shore**."

"What do you mean by **shore**?" asked Nellie.

"The bank is the shore," Mr. Cartmell said.

Fred took the pieces of cotton out of the boat, seeing at once why his father put them there. He put in their places some tea and silk, to represent the country where he was. Then he reset the sails, and sent the boat back to his father. His father returned it with some wheat on board.

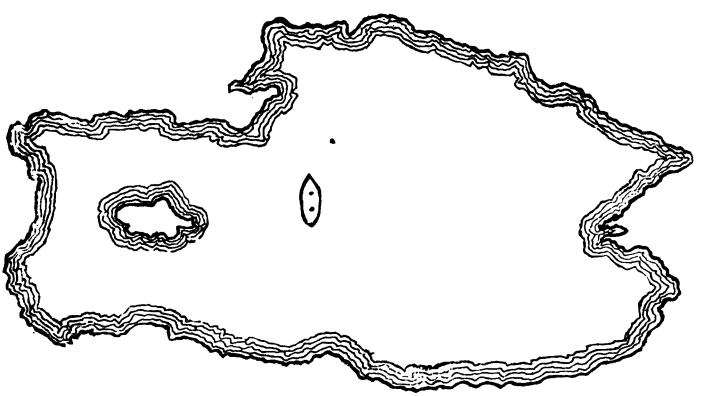
"This," said the father, "is called **trade**. We send cotton, wheat, lard,

oil, and many other things across the ocean to countries where they have none, or not enough for use; and the men living there send us tea, silk, and coffee."

Over and over the "Flyer" was made to cross the pond, carrying the different articles, till at last all were tired of "the game of trade," and ready to go home.

On their way home, the children said they hoped, when they grew up, to go across the ocean and learn how people live in other lands.

After supper Fred drew a plan of the **pond** with his boat half way over. This pleased his sisters very much.



MAP OF POND.

REVIEW.

A **pond** is fresh water with land all around it.

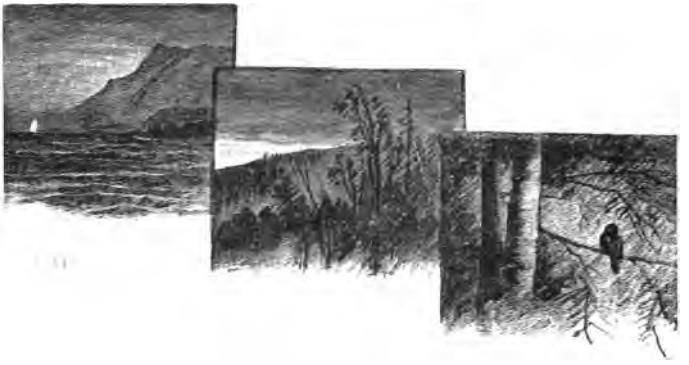
Trade, or **commerce**, is giving the articles of one country for those of another.

BUSY-WORK.

Draw a picture of Fred's boat. Let each pupil try to make a boat of paper or wood. Then play "the game of trade."

COPY:—

Fred sailed his boat on Spy Pond



LESSON II.

LITTLE BY LITTLE.

Little by little
  The bird builds her nest,
Little by little
  The sun sinks to rest.

Little by little
  The waves, in their glee,
Smooth the rough rocks
  By the shore of the sea.

Drop after drop
  Falls the soft summer shower,
Leaf upon leaf
  Grows the cool forest bower.

Minute by minute
  So passes the day,
Hour after hour
  Years are gliding away.

LESSON III.

ALONE ON AN ISLAND.

"I wonder what an **island** is?" Nellie asked her older sister Florence.

It had been raining all the afternoon, so Florence called her sister to the window and pointed out a little piece of ground with water around it on every side. "That is an island, Nellie, where the ground has water all around it in the path, near the rose-bush."

"Oh, I see!" said Nellie. "Is there not an island in Spy Pond?"

"Yes, at the lower end."

In the evening, Mr. Cartmell and all the family were in the study. Fred asked his father to tell them about the man who lived alone on an island, and did not like it.

"I know who it was," said Fred; "his name was ROBINSON CRUSOE. But it is all a tale. There never was such a man."

"True," replied Mr. Cartmell; "but many men have lived alone upon an

island, and this story tells how a man feels when left alone on a distant island."

"I never heard it," said Nellie. "Do tell us about it."

So Mr. Cartmell began:—

"Crusoe sailed in a ship that ran on

THE WRECK.

a rock, and every man on board was drowned except himself. The waves cast him on shore, and then he found he was on an island where no one lived."

"Not even wild men?" asked Fred.

"No. When the sea was calm he saw the ship still resting on a rock, and he

thought the best thing to do was to get out of her all that he could. So he made a raft, and on this raft he brought out of the ship casks of biscuit and barrels of powder, and guns and swords and all sorts of useful things. In the ship he found some money, but it was so useless to him that he very nearly threw it into the sea."

"Oh, how foolish!" cried Fred.

"Well, what could he buy with it?" asked George, Fred's older brother. "There were no shops in the island."

"But he might have kept it," replied Fred.

"I believe he did keep it," went on Mr. Cartmell. "But George is quite right; money is of no use in itself. We like it because we can almost always change it for other things that we want; and as Crusoe could not do this, a single box of matches, such as we can buy for a penny, would have been worth more to him than a hundred dollars in gold.

"When he had got a good many things on shore, the ship went to pieces and he saw no more of her. He had now to

make himself a house. He found a hill not far from the shore, and against the

CRUSOE AT HOME.

side of this hill he made a tent with sails and masts from the ship.

"Then he made a fence around the front of his tent. This fence was made

of live wood stuck in the ground. The wood sprouted and grew so as to make a thick grove before the tent. Besides this, Crusoe dug a cave under the hill behind his tent, and made rooms in it to hold his stores."

"What sort of stores did Crusoe keep in his cave?" asked Fred. "I thought it was a desert island."

"Yes," said Mr. Cartmell; "but 'desert' does not always mean the same thing as 'barren.' Crusoe found some grains of rice and barley, and sowed them in the ground. After a while he had quite a crop, and he needed a place to store it in. Then, besides, he had guns and powder and tools that were got out of the ship, and all these had to be kept dry. So the cave was very useful."

"Had he nothing to eat but biscuits and barley and rice?" asked Fred.

"Oh, yes," replied his father; "with his guns he shot birds that were good to eat. He found goats, too, running wild. He shot these at first, but then he caught some of them and tamed

them. After a while he had quite a nice little flock."

"Why, they could give him milk," cried Nellie.

"Yes, to be sure," said Mr. Cartmell; "and he learned to make butter and cheese of the milk."

"But you said he did not like the island, Father. Why not?" asked George.

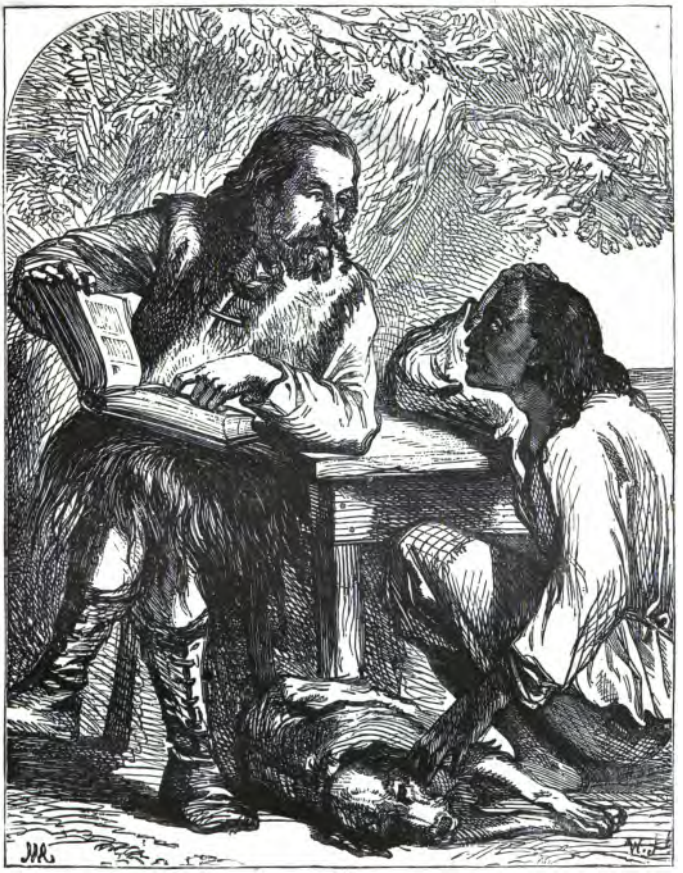
"Well, it was very lonely," replied Mr. Cartmell. "You know the Bible says it is not good for man to be alone."

"I should not mind it for a little while," said Fred. "How long was he there?"

"He was there more than twenty-seven years," answered Mr. Cartmell; "but for the last three years he had a servant to be with him. Not far off across the water there was a land where tribes of red men lived. Once they came in their canoes to Crusoe's island, bringing a young man, whom they were going to kill and eat."

"To eat!" cried Florence; "how horrible!"

"So it was," said her father. "But Crusoe saved him and got him free."



CRUSOE AND FRIDAY.

"How did he do it?" asked Fred.

"The young man ran away, and he

was chased for a long way by his keepers. Crusoe knocked down one of them and also shot one. The poor man that was saved then became Crusoe's servant, and his name was called Friday."

"What a strange name!" cried the children.

"Well, it was on a Friday that Crusoe found him," said their father, "and that was the reason of the name. But you must read the story for yourselves. After reading it, Fred will not wish to live on an island by himself."

REVIEW.

An **island** has water all around it.
A **lake** has land all around it.

LANGUAGE LESSON.

Write from memory the story you have just read.

COPY:—

There was once a man named Crusoe, who lived alone on an island

LESSON IV.

PITTER-PATTER.

"Oh, where do you come from,
You little drops of rain,
Pitter-patter, pitter-patter,
Down the window pane?

"They won't let me walk,
And they won't let me play,
And they won't let me go
Out of doors at all to-day.

"They took away my playthings
Because I broke them all.
And then they locked up all my blocks
And took away my ball.

"Oh, tell me, pretty raindrops,
Is that the way you play,
Pitter-patter, pitter-patter,
All the rainy day?"

The little raindrops cannot speak;
But pitter, patter, pat
Means: "We can play on this side;
Why can't you play on that?"

LESSON V.

THE LITTLE BUILDER.

One beautiful afternoon during vacation the Cartmell children became

FRED GOING TO THE SUMMER-HOUSE.

tired of playing "hide and seek," "tag," "ball," and "guessing" games, so the girls went to the summer-house with

their dolls, and Fred went to find his older brother, George. He searched in the house, in the barn, and in the grove behind the house, but no brother could he find. He then went into the garden, toward the summer-house. Just at this time the two sisters, whom he dearly loved, saw him coming, and asked him eagerly to build them a **dolls' house.**

"Where do you want me to build it?" asked Fred.

"In the summer-house," said Florence. So Fred went into the house for his box of blocks, and the girls carried out another box full of little tables and chairs, a stove and dishes, to put into the house when it was done.

"Shall I make it like the last one?" inquired Fred.

"No," said Florence. "We want to-day four rooms instead of two. You must make us a kitchen, two bedrooms, and a parlor."

"Very well. To avoid any mistake, I will mark it out with one layer of blocks first."

Fred spread on the floor a large piece of paper, and placed the blocks on the paper so as to show four rooms,—one for each doll.

"What is this long place for?" asked Nellie.

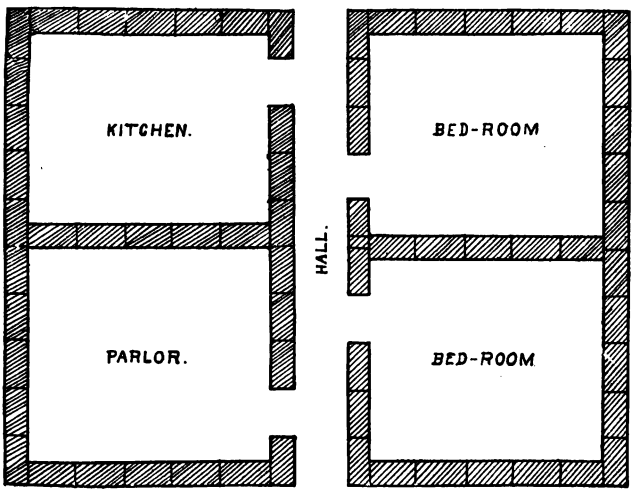
FRED BUILDING THE DOLLS' HOUSE.

"That will be the hall, with the front door at one end and the back door at the other. I will make the different rooms to open into the hall."

The girls were pleased with the plan, and Fred completed the house, build-

ing up the walls by laying one block above another all around, till he had used all the blocks in the box.

While his sisters were arranging the rooms with the various things they brought from the house, Fred was busy



PLAN OF DOLLS' HOUSE.

marking his plan of the dolls' house on the paper by drawing a pencil along each side of the walls next to the lowest layer of blocks.

"What are you doing that for?" inquired Florence.

"The teacher asked us last week to

try to draw a plan of something. I am going to carry her this for my plan."

After the children were through playing, the girls picked up the many things they brought out for the dolls' house, and Fred put the blocks back into the box, and folded up the paper with the lines on it. His drawing is shown on the previous page.

Miss Gray, Fred's teacher, was pleased to see his plan of a house. As it was the best one brought in, Fred was asked to draw it on the blackboard with red crayon. Then his teacher asked him to bring his blocks to school in the afternoon.

BUSY-WORK.

Let the children write on paper the names of the different persons mentioned in this lesson.

COPY:—

Fred carried the plan of the house to his teacher

LESSON VI.

ALL THINGS BRIGHT AND BEAUTIFUL.

All things bright and beautiful,
All creatures great and small,
All things wise and wonderful,
The Lord God made them all.

PURPLE-HEADED MOUNTAIN.

Each little flower that opens,
Each little bird that sings,
He made their glowing colors,
He made their tiny wings.

The rich man in his castle,
The poor man at his gate,
He made them, high or lowly,
And ordered their estate.

The purple-headed mountain,
The river running by,
The sunset, and the morning
That brightens up the sky,

The cold wind in the winter,
The pleasant summer sun,
The ripe fruits in the garden,
He made them every one.

The tall trees in the greenwood,
The meadows where we play,
The rushes by the water
We gather every day,—

He gave us eyes to see them,
And lips that we might tell
How great is God Almighty,
Who has made all things well.

MRS. ALEXANDER.

LESSON VII.

THE PLAN OF THE SCHOOLROOM.

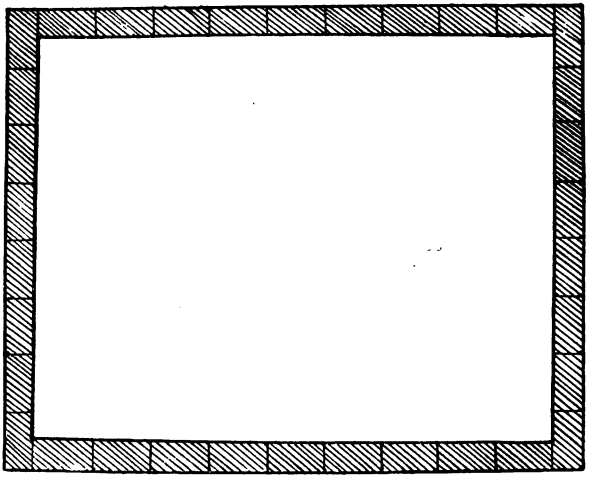
In the afternoon, Fred was back at school long before the bell rang, with his box of blocks under his arm.

The teacher had a yardstick in her hand, and the pupils counted how many times she could lay the yardstick on the floor across one side of the room. "Nine times," they said.

Then the teacher told Fred to place nine blocks end to end on the large sheet of paper on her desk. Fred did so. The teacher then measured the next side of the room, and as often as the class counted, Fred put down on the table one block. It took eight blocks for the next side. The teacher now called another boy to finish the other sides with blocks. The children then came forward by rows and carefully examined the **block plan** of the schoolroom.

"Who can change it to a drawn plan?"

Fred was allowed the honor, and quickly marked with a pencil on each side of the blocks. Then he and the teacher removed the blocks, and the



large sheet of paper was hung up on one side of the room, where all could see it.

"Now I will try to draw the **plan** on the blackboard, and make some additions," said the teacher.

"If I make the longer side on the

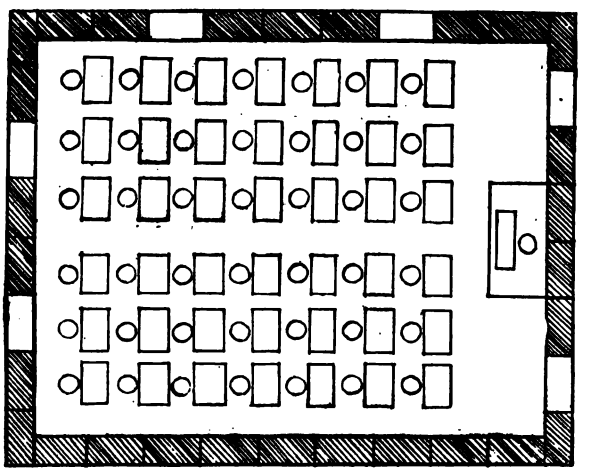
board three inches for every block, the line will be how many inches long?"

"Twenty-seven inches."

"And the shorter side?"

"Twenty-four inches."

The teacher drew the lines very wide, so as to represent the walls.



PLAN OF THE SCHOOLROOM.

"Is there a door to the room?"

"Yes, there are two doors."

Then the teacher made two spaces in the sides by rubbing off the chalk and writing "door" in each place.

"Have we any windows?"

"There are four windows."

These were marked in the same way.

"What else have we in this room?" asked the teacher.

"Your desk and platform," said Fred.

So she indicated by small rectangles and a circle the teacher's platform, desk, and chair.

"Is that all?"

"No, our desks."

"How many are there?"

"Forty-two."

The teacher sketched in the desks and chairs as shown on previous page.

BUSY-WORK.

"You can all try," said the teacher, "to copy this plan on your slates, making your lines half an inch for each block."

COPY:—

The plan shows doors, windows, and desks.

LESSON VIII.

THE BLOCK CITY.

What are you able to build with your blocks?
Castles and palaces, temples and docks.
Rain may keep raining, and others go roam,
But I can be happy by building at home.

Let the sofa be mountains, the carpet be sea,
There I 'll establish a city for me:
A kirk and a mill and a palace beside,
And a harbor as well where my vessels may ride.

Great is the palace with pillar and wall,
A sort of a tower on the top of it all,
And steps coming down in an orderly way
To where my toy vessels lie safe in the bay.

This one is sailing and that one is moored;
Hark to the song of the sailors on board!
And see on the steps of my palace the kings
Coming and going with presents and things.

Now I have done with it, down let it go!
All in a moment the town is laid low.
Block upon block lying scattered and free.
What is there left of my town by the sea?

Yet as I saw it I see it again,—
The kirk and the palace, the ships and the men.
And as long as I live, and where'er I may be,
I'll always remember my town by the sea.

R. L. STEVENSON.

LESSON IX.

PICTURES AND PLANS.

The next day the teacher took up the same lesson again.

"Mary, how long did you make the longer side of your plan?"

"I made it five inches."

"You reckoned how much for each block, or yard?"

"Half an inch."

"If the longer side is five inches, then the shorter side will be how long, Henry?"

"It will be one half of eight blocks, or four inches."

"My plan on the board is much larger than yours, but both are right. Mine is on a large scale, of one inch for every foot length in the side of the room; yours is on a small scale, of half an inch for every yard, or three feet. How much larger is my plan than yours?"

Fred was the only one who could answer this correctly.

"Six times larger."

"Now you have all made a plan and seen others make one," said Miss Gray. "Who can tell me what a **plan** is?"

"A picture," cried several pupils.

"No, no; a plan is not a picture, as I will try to show you."

Then the teacher held up a photograph of the inside of the schoolroom, and allowed the children to leave their seats, so that they could easily see it.

"What do you see?" she asked.

"A picture of this room."

"What do you see in the picture?"

"Windows, blackboards, pictures on the walls, a clock, and children's faces."

"Well, then, tell me what is a picture?"

"It is a drawing which shows a place or thing just as it looks."

"Does this plan on the board show how the schoolroom looks?"

"No, Miss Gray. It only shows the form of the room, and where the desks and chairs are placed."

"A plan, then, shows a place as we see it from above. A picture shows a place as we see it before us. Both may

OUR SCHOOLROOM.

be drawings. May I make a picture or a plan as large or as small as I like?" asked the teacher.

Most of the children said "Yes."

"But what must I take care to do? Look at the different plans."

"To make every part of the large plan large, and every part of the small plan small."

"Very good. Everything in the same plan must be on the same **scale.** If we alter one part of a plan we must alter every other part.

"An inch long may stand for one foot, or ten feet, or a mile; but whatever an inch long stands for, an inch broad must stand for the same. Then the plan is correct.

"Next week we will try to make a plan of the school-yard and the village."

LANGUAGE LESSON.

1. *What is a plan?*
2. *What is a picture?*
3. *What does "scale" mean?*

COPY:—

A plan shows a place as we see it from above

LESSON X.

GOOD RULES IN VERSE.

Work or play, read or spell,
One thing at a time and do it well.

Work while you work, play while you play,
Is the best way to be happy and gay.

All the day do what is right,
And sweet your sleep will be at night.

Ne'er till to-morrow's light delay
What may as well be done to-day.

You should to others always do
As you would have them do to you.

With all your soul love God above,
And as yourself your neighbor love.

LESSON XI.

VILLAGE AND CITY PLANS.

CHILDREN IN THE STUDY.

Fred spent many leisure moments in drawing with his pencil. Whenever his sisters asked him what he was doing, he always replied, "Wait and see."

About the middle of May, Fred received a letter from his older brother, George, who was away at school, saying he hoped to come home in two weeks and bring his cousin Henry from the city.

"Oh, girls, Cousin Henry is coming to spend a week at the farm!" said Fred one morning before breakfast.

"What fun we shall have!" exclaimed Florence and Nellie, dancing about to express their joy.

"I am going to write Cousin Henry about this village and our home," said Fred.

"Oh, do," said Nellie, "and tell him everything. Tell him all about the pond, the grove and glade, the hill, the wood, Cousin Amy's home, and the river."

"Why, it would take me all day to do that! I have learned in school a shorter and easier way."

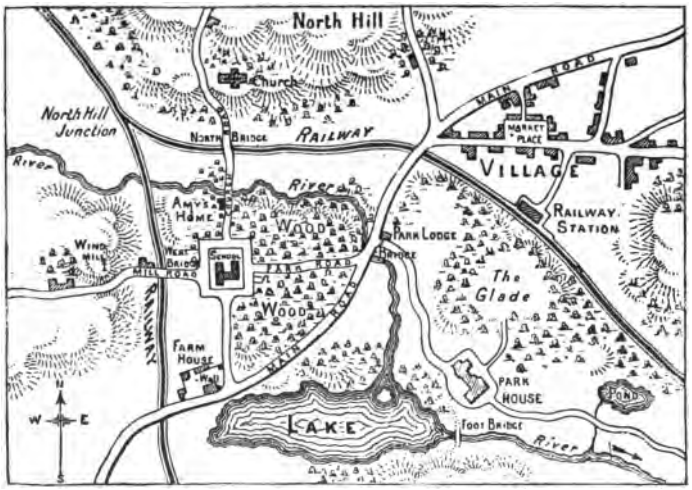
Then Fred showed his sisters the plan on which he had worked so hard during the last two weeks.

"What do all those lines and marks mean?" asked Nellie.

"This is a plan, or map, of the village of Lake View and vicinity. Here is Park House, our home. Here is the pond where we played the game of trade. Here is the schoolhouse, and here the main part of the village."

"What a small place you have made for the schoolhouse and yard!"

"Certainly; because everything is here drawn on the small scale of one inch to a mile. This map shows three and a



PLAN OF LAKE VIEW.

half miles one way and two and a half the other way."

"What do the crooked and wavy lines mean?"

"They mean water in rivers, ponds, and lakes."

"What do the double lines mean?"

"They show where the main roads run."

"What do the two heavy, dark lines mean?"

"They show the two railroads. You see, the railroads go under the main roads when they cross, but over the river."

"I can see Cousin Amy's home, near the schoolhouse," exclaimed Nellie.

"Where is our church?" inquired Florence.

"It is beyond the railroad on the North Hill," replied Fred, pointing to the place.

"Do these short, curved lines mean the ground rises here?" asked Florence.

"Yes. Wherever you see those short curved lines, you know there are hills or mountains. The whole plan is drawn to appear as if you were looking down upon it from a balloon."

In the evening the letter was finished, and Mr. Cartmell mailed it for Fred. In a few days Henry sent the following letter to his cousin Fred, with a plan of a part of the city:—

Boston, May 17.

My dear Cousin Fred,

Your interesting letter inviting me to spend a week with you was received last night. I was greatly pleased with your plan of Lake View. It helps me to understand the appearance of your home much better than words would.

In return, I send you a plan of that part of our city in which I live. Our house is on Harvard Street.

Papa says I can go to your house about June 14. Shall we not have some grand times together?

Your affectionate Cousin,

Henry.

Fred read the letter to his sisters, and then they spent some time looking over the plan of the city which their cousin Henry had sent to them.

"These are the streets," said Fred, pointing to the paper. "There is not room to mark every house on a plan so small.

"The plan only shows the shape of each block of buildings, where it stands, and the ground it covers.

"Here is the house in which Henry lives, for he has marked it. There is a school, with houses on every side. How different from our school in the country, which stands amid tall trees and green fields!"

"Of what use is that plan to any one?" asked Nellie. "I think it is more like a puzzle than like anything else."

"I'll show you what may be done with it," said Fred. "Suppose I were going to see Henry, and that I had never been in the city before, but had this plan in my pocket.

"The train would take me to the

railway station. Henry lives in Harvard Street, where he has made a cross on the plan. Well, I should just walk along Kneeland Street, turn into

PLAN OF THE CITY.

Tyler Street, and I should be at the place.

"People go to strange cities and are able to find their way by means of plans, without asking any one to show them where to go.

"Do you know the difference between a city and a village?" asked Fred.

"I know that a city has a great many more streets and houses and stores in it than a village has," said Florence.

"That is the difference," said Fred. "A city is a great many houses built near together, and a village is a few houses built near together."

BUSY-WORK.

Let the children make plans of the streets near where they live. Let them write letters to their cousins.

REVIEW.

A city is a great many houses built near together, and a village is a few houses built near together.

COPY:—

Henry Cartmell visits his cousins at Lake View

WINTER.

LESSON XII.

THE MONTHS.

1. **January** brings the snow;
   Makes our feet and fingers glow.

2. **February** brings the rain;
   Thaws the frozen streams again.

3. **March** brings breezes loud and shrill;
   Stirs the dancing daffodil.

4. **April** brings the violet sweet;
   Scatters daisies at our feet.

5. **May** brings flocks of pretty lambs,
Skipping round their fleecy dams.

6. **June** brings tulips, lilies, roses;
Fills the children's hands with posies.

SUMMER.

7. Hot **July** brings sultry hours,
Thirsty fields and summer showers.

8. **August** brings a golden store,
And the harvest-home once more.

9. Warm **September** brings the fruit;
Sportsmen then begin to shoot.

10. Brown **October** brings the breeze;
Shakes the beechnuts from the trees.

11. Chill **November** brings the blast;
Then the leaves are falling fast.

12. Cold **December** brings the sleet,
Blazing fires, and Christmas treat.

LESSON XIII.

A MAP.

PART I.

A few days after the plan of the schoolroom had been made, Fred's teacher helped the pupils to make a plan of the yard and streets near by. We have no doubt your teacher will do the same if you ask her politely.

At the next lesson the teacher asked, "Has any one ever seen a plan of anything else?"

"Yes," said Fred. "I made a plan of the village the other day."

"Well, we may make a plan, not of one village only, but of many villages and towns; and we may make a **plan of our country.** "I will make a plan of our country on the board, and you may watch me."

The teacher then made a square. This square she divided into smaller squares, and then she drew in it a plan of North America.

As the plan grew, the eyes of the children became brighter and brighter, and their hands were stretched high in air, showing their anxiety to say something. Finally the teacher gave permission.

"I think you are drawing a **map** instead of a **plan.**"

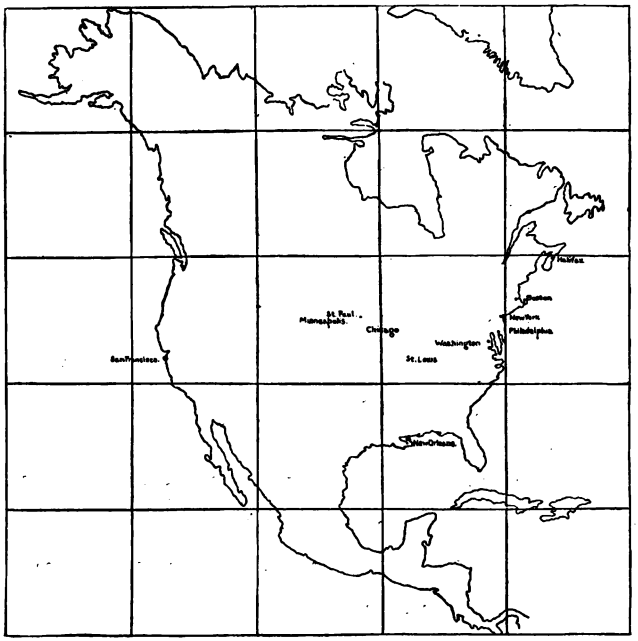
"Why do you think so, Albert?"

"Because it is so much like the map of North America, hanging on the wall.

"True. All plans are maps, and all maps are plans. We usually call them plans when they show a small surface of the earth, as in a house or school yard. We call them maps when they

show a larger surface, as in a town or country.

"We must be just as careful in making a map, as in making a plan, to



MAP OF NORTH AMERICA.
EACH SQUARE REPRESENTS 1000 MILES EACH WAY.

draw every part of it on the same scale.

"If we make one inch stand for a thousand miles long, one inch must stand for a thousand miles broad.

"In drawing the map of North America, what did I draw first?"

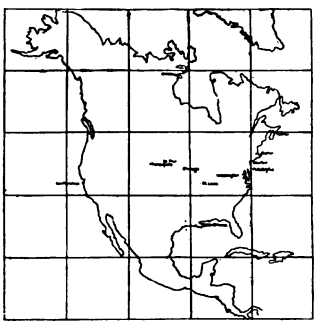
"The large square."

"Into how many small squares did I divide it? Count and find out."

"Into twenty-five."

"Correct. Each square shows one thousand miles each way.

"Now I will make the same map in a smaller square. This I also divide into twenty-five squares. Watch me sketch the outline. Does it look like the first map I drew?"



MAP OF NORTH AMERICA.
EACH SQUARE REPRESENTS 1000 MILES EACH WAY.

"Yes, ma'am."

"Can I draw a smaller one?"

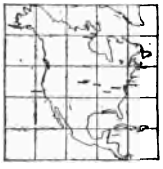
"I think so."

"To make you sure, I will try."

The teacher soon finished the third map, and told the children that in each case the squares showed one thousand miles each way.

Then Miss Gray said to the class:

"From these three maps we learn that the same map may be drawn in a square of any size. The scale on which a map is drawn has nothing to do with the size of the country.



MAP OF NORTH AMERICA.
EACH SQUARE REPRESENTS
1000 MILES EACH WAY.

"In most books the scale is different in different maps. This gives us very wrong ideas."

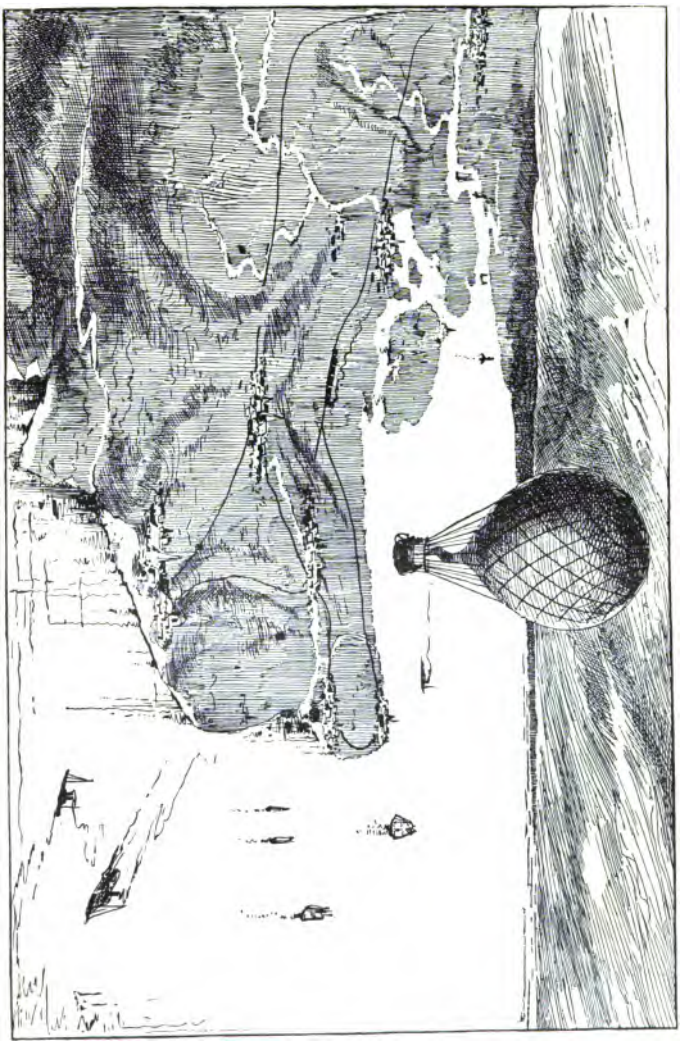
PART II.

"But," continued the teacher, "it is more difficult to **read** a map than to draw one.

"To help you in this matter, I have drawn you a **picture-map**, in charcoal, of a part of England as it would look from a balloon.

"The picture is so small that I can show in it only a very few of the largest objects, such as hills, rivers, towns, villages, and railways.

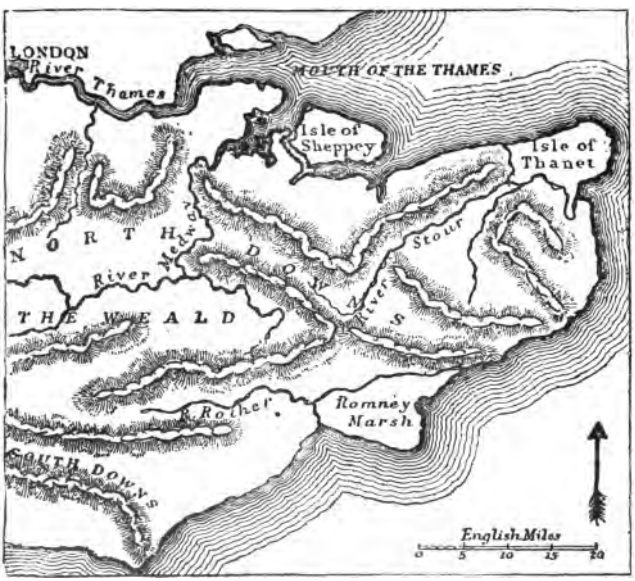
"Now I will show you how to make



BALLOON VIEW OVER KENT, ENGLAND.

a real map by using the proper marks on the paper to indicate each place.

"First, we have to show the shape of the country. This we do with thick, wavy lines, just as I am now drawing."



MAP OF KENT, SOUTHEASTERN PART OF ENGLAND.

"Why do you make such a wavy line for the sea?" asked one of the children.

"Because the sea seldom washes the land in a straight line. The hills run

from northwest to southeast, so we will lay them down on the paper in that way. This might have been done by drawing thick lines; but it looks better, I think, to make them with many short lines, facing each other something like eyelashes. When these lines lie close, they show that the hills and mountains are high. If they are wide apart, then the hills are low. The hills have names as well as you. The longest range of hills in Kent is known as the North Downs.

"**Rivers** are made on the map by means of lines which twist and wind about just as the rivers and streams really do.

"As the rivers near the sea they become wider; so the lines I am making are thicker and thicker as they run toward the coast.

"When the map is finished, I must show by dots and circles where the villages and towns are, and also the railroads by thick lines.

"Some parts of a map show land, and other parts show water. The wavy

lines tell where the water and land approach, or the **shore**. The water is often made darker than the land. On some wall-maps the water is colored blue."

"Why do you put an **arrow** in the corner of the map?" asked Albert King from one side of the room.

"To show you," replied the teacher, "which **direction** is north. I will hang the map of England on the north side of the room, and Albert may stand before it and point to the east. Does he point correctly?"

Class.—"Yes."

Teacher.—"Nellie may now point to the west, standing where Albert stood."

She pointed correctly; and the teacher asked,—

"What point is opposite east, Class?"

Class.—"West."

Teacher.—"Opposite north?"

Class.—"South."

Teacher.—"Then, if north is on the top of a map, where will south be?"

Class.—"At the bottom."

Teacher.—"If east is at the right

hand, nearest the rising sun, where will west be?"

Class.—"At the left."

Teacher.—"As this is the rule in all

CARDINAL POINTS ON A MAP.

maps, the North is only marked with an arrow on plans or very small maps."

The teacher now placed a **globe** near the table. It was a ball fixed in a frame. On the ball was drawn a map.

"This is a map of the world," she

said. "A map of the world is best shown on a ball, because the world is round. All the different parts of the world are marked on this ball, and it looks like a little world.

A GLOBE

"It is fixed in a frame so that it may be turned round and round, to show first the one side and then the other.

"But a map of the world is not always drawn on a ball; it is oftener drawn on a sheet of paper.

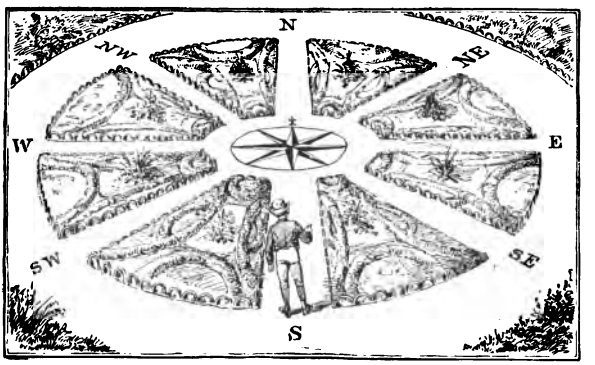
"Here is a flat map of the world," said the teacher, hanging up one of the wall-maps.

"To show both sides of the world at once, two round maps are placed side by side."

Then she turned the globe so as to show that each of the round maps was a plan of one half of the world.

THE WORLD.

When Fred and his sisters reached home after school, they found their father had laid out the flower-beds in



CARDINAL POINTS.

one corner of the garden to represent the different **cardinal points** of the compass.

A sketch of this new way of laying out a garden is given on page 57. If the children will open the book to this page, and place it on the desk, so the top of the book is toward the north, they can tell where the other points of the compass are.

REVIEW.

The **size** of a **map** does not indicate the size of the country.

Every **line** and **mark** on a map has some meaning.

LANGUAGE LESSON.

Tell how a map or a globe looks.

COPY:—

The top of the map is usually North

THE WORLD IN AIR.

LESSON XIV.

THE WORLD.

Great, wide, beautiful, wonderful World,
With the wonderful water round you curled,
And the wonderful grass upon your breast,—
World, you are wonderfully drest.

The wonderful air is over me,
And the wonderful wind is shaking
the tree;
It walks on the water, and whirls the
mills,
And talks to itself on the tops of the
hills.

You friendly Earth, how far do you go,
With the wheat-fields that nod and
the rivers that flow,
With cities and gardens, and cliffs and
isles,
And people upon you for thousands of
miles?

Ah, you are so great, and I am so
small,
I tremble to think of you, World, at all;
And yet when I said my prayers to-
day,
A whisper within me seemed to say:
"You are more than the Earth, though
you are such a dot;
You can love and think, and the Earth
cannot!"

MATTHEW BROWNE.

LESSON XV.

THE EXCURSION IN THE COUNTRY.

In a few days Henry arrived at the Cartmells' for a short visit. He had never been in the country before, and everything was new and interesting to him. George and Fred showed him about the premises, and explained many of the common farming operations.

When the children were ready to go to bed, about nine o'clock, Mr. Cartmell said he had planned a surprise for them the next day.

A heavy rain-storm came on in the night, and startled the lads as they lay in bed. But the warm sun broke forth in the morning, and lit up the trees and grass, and made a charming scene.

"Wake up, boys!" said Mr. Cartmell; "to-day we will take a drive for a few miles in the country."

The boys were quickly dressed, and as soon as breakfast was over the party began their trip.

"We shall find the country about this district very different from the level fields round our home," said Mr. Cartmell. "We live, as you know,

A COUNTRY ROAD.

where the ground is quite level; but here we shall find steep **hills** in plenty to drive up and down.

"There," said Mr. Cartmell, pointing forward, "see what a fine range of hills

there is before us, and another range behind, and still another, with deep hollow places between!"

"Oh, that is a pretty sight!" said little Nellie.

Mr. Cartmell tried to make them all understand that the long rows of hills were very much like the waves, and the deep places between them like the hollows between two lines of waves.

"The longer you look," said Mr. Cartmell, "the more you will see the likeness, only the one scene is on land and the other on water. The high parts of the land are called **hills**, and when very high they are known as **mountains**. You remember that when looking at the picture of the sea the other day, I told you that when the waves leap very high we call them 'mountain waves,' because they mount so high in the air. The same applies to very lofty hills; they seem to mount toward the sky, and are termed mountains."

In answer to a question from one of the boys, the father described some mountains as being so high that their

tops were among the clouds, and others so far above the level of the warm earth as to be always capped with snow.

And then he pointed out the fact that the top of the range was not even like a long bank, but notched almost

AMONG THE CLOUDS.

like the teeth of a saw. "To deserve the name of mountain," he said, "it should be a hundred times as high as our house; if lower than that it would be termed a hill. There are some mountains in the world a thousand times as high as the old house at home."

"What do you mean by **a range?**" inquired George; to which his father replied,—

"A range of mountains means several mountains standing in a row, touching

RANGE OF HILLS AND MOUNTAINS.

one another, almost like the links in a chain; and for that reason we sometimes speak of them as a mountain **chain.** And the line of the range above which the chief peaks rise is called the **crest,** or **ridge.**"

George wondered whether mountains were always arranged in rows, and was informed by his father that they sometimes stand in **groups**, which he explained thus: "When a family of children sit round a table, we say that is a family group; a number of marbles put down in a ring would be termed a group of marbles; several things put together, without any regular order, form a group; and from this you will easily see that a number of mountains dotted about, near to one another, is a group of mountains, whether their feet touch one another or not."

"Did you say that mountains have **feet**, Father?" asked Fred.

"Yes," was the reply. "The lowest part is called the **foot**, or **base**, and the highest part the **crown**, or **summit**; just as the lowest part of your body is known as the foot and the highest the crown. And you may see, standing out sideways from the bases of a chain of hills branches called **spurs**; as they stand out from the feet of a mountain range, they remind us of the

spurs standing out from the heels of a huntsman or soldier when riding."

Florence asked if the tops of the mountains were very cold; and she was surprised on being told that the summits of many of the very high ones are covered with snow all the year round.

A SNOW-CAPPED MOUNTAIN.

"And those tall ranges," Mr. Cartmell said, "may divide one country from another, forming a high mountain wall, over which the people on either side cannot climb."

"Then," asked Henry, "do the people on the one side never see those on the other?"

"Some of them," said his uncle, "travel across the mountain range, al-

though they cannot get over the top. Do you wonder how that can be?"

"Yes, we do," replied the boys in concert.

MOUNTAIN PASS.

"There are in some places," Mr. Cartmell explained, "cracks or glens across the mountain chains, and perhaps a place where two hills do not touch each other except at their feet; then the people use the hollow place as a road, and pass along the opening to the

other side of the range. What do you suppose such a road is called?"

None of the boys could guess.

"Why," said their father, "it is termed a **pass**, for the reason that the people pass along this hollow place."

The family had now gone about fifteen miles, when they stopped on Prospect Hill, and under some large maples opened their lunch-baskets, and enjoyed the generous luncheon Mrs. Cartmell had provided.

REVIEW.

A **mountain** is land rising to a great height above the surrounding country.

A **hill** is a little mountain.

A **mountain range** is a row of mountains.

DICTATION EXERCISE.

A mountain is a mass of land which rises more or less steeply to a great height. The bottom of the mountain is the foot, or base; the top is the crown, or summit. The tops of the highest mountains are always covered with snow.

LESSON XVI.

OUR MOUNTAINS.

There 's many a mighty mountain
In other lands than ours,
And many a crystal fountain
Flows down in sparkling showers;
But I 'm sure no rocky masses
Excel the coasts of **Maine**;
None our **Granite** group surpasses,
Or the hills about **Champlain.**

What mounts show beauty brighter
Than **Fremont's** lofty **Peak?**
Does n't every heart grow lighter
As Western praise we speak?
Than its prairies wide none sweeter
Grow verdant with the spring;
Than its rills, though some are fleeter,
None gentler music sing.

To many a land we wander,
And praise their beauties fine,
Oft by their streams meander,
But, Home, our hearts are thine.

From the North, where **Rockies** tower
And **Elias** lifts its crest,
To where **Cape Ann's** stern cliffs lower,
We love our Country best!

LESSON XVII.

ON THEIR WAY HOME.

"Are mountains always in **ranges** or **groups?** Do they never stand alone?" George asked, after they all had enjoyed half an hour of play.

Mr. Cartmell replied that they seldom stood singly, for the reason that the same cause which made one mountain would make more, except when fire rose out of the earth and pushed the soil up to a great height. Then it was a **volcano,**[1] meaning a burning mountain.

"I will tell you more about this subject when we reach home," continued Mr. Cartmell. "Do you see those hollow places between the hills? They are called **valleys**, or **vales.**"[2]

[1] See page 77. [2] See page 84.

"Then all hollow places are valleys?" asked George.

"Strictly speaking, that is right," re-

A GORGE.

plied his father; "but we give different names to explain what kind of valleys they are. Some very narrow valleys are called **glens**. Others, which appear to be

merely narrow slits between rocks, are called **gorges.**"

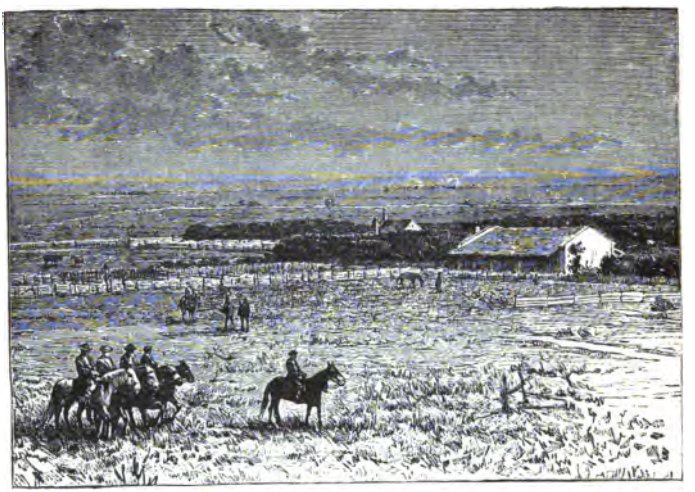
"Are there not some places, Father, so flat that they are neither hills nor valleys?"

"Yes" replied Mr. Cartmell; "there are some places that are almost level, like the land near home. Our own district, you know, is very flat. There are only two hills of any size near the village,—the one on which the old windmill stands, and North Hill, beyond the church."

The party drove back to the cottage on another road than the one by which they had come. They took a longer way back, leaving the hills to their left, and drove across a wide, even space, which, George said, was the very kind of space they had been talking about. It had neither hills nor valleys, but was almost level; and the broad space was watered by a pretty river that wound its way across the plain.

Mr. Cartmell told the boys that the level space was called a **plain;** and George, of course, asked why it was so named.

The boys were told that a plain was a large piece of ground, almost if not quite level, like the broad and open space over which they were driving; and if it were a considerable height above



A PLAIN.

the level of the sea, it would be called a **plateau**, or table-land.

Mr. Cartmell added: "The word 'plain' means smooth, easy, straightforward; so when the land is smooth, we say it is a plain; when anything is easy to understand, we say that it is very plain; and when any one asks us something

in a straightforward manner, we say that is a plain question."

"Does a plain differ much from a desert?" asked Nellie of her father.

"Oh, yes. Both may be level, but the plain is generally covered with grass

A CARAVAN.

or bushes, or both; the desert is usually without any grass, and shows nothing but sand and stones, except in certain places. The desert, however, is not always level; it frequently contains hills, mountains, and valleys."

"Do people ever cross deserts?"

"Yes. But it is so dangerous, and

travellers are so liable to perish for want of water, or to lose their way, that they usually go in large companies called **caravans.**"

"I have read of places in the desert where a few trees grow, and where there

AN OASIS.

is a supply of water. What are they called, Father?"

"Such fertile places are called **oases.** They are frequently found near hills or in the valleys between mountains. Sometimes they are very beautiful. The Arab

guides know where the oasis is situated, and direct the caravans from one to another."

After supper all the children went into the study, and Mr. Cartmell showed them the pictures of volcanoes in Cummings's "Fire Fountains."

He then put on the easel a large photograph of Mount Vesuvius and a picture of the destruction of Lisbon. The girls were astonished by these striking illustrations of the great forces of Nature.

"How terrible!" exclaimed Nellie.

"Please tell us about the pictures," said Fred.

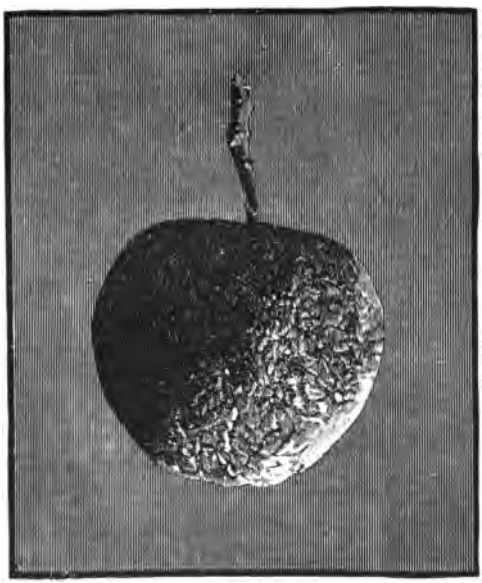
"We have already learned that at one time, long, long ago, the earth was a mass of fire, and that it has been slowly cooling. As it cooled a crust formed. This crust was not smooth, but it was wrinkled all over."

"Do you mean, Father, wrinkled like the skin of an apple when baked?" inquired Nellie.

"Precisely. That is so good an illustration, I wish you would ask your mother if she has any baked apples."

Nellie went out, and soon returned with a good specimen, which her father used to illustrate the subject.

"Not only is the dry land uneven, but the land at the bottom of the ocean



A BAKED APPLE.

is just as much broken up," said Mr. Cartmell.

"How can men tell what the bed of the sea is like?" asked Fred.

"Men have found this out by letting down long lines to the bottom of the

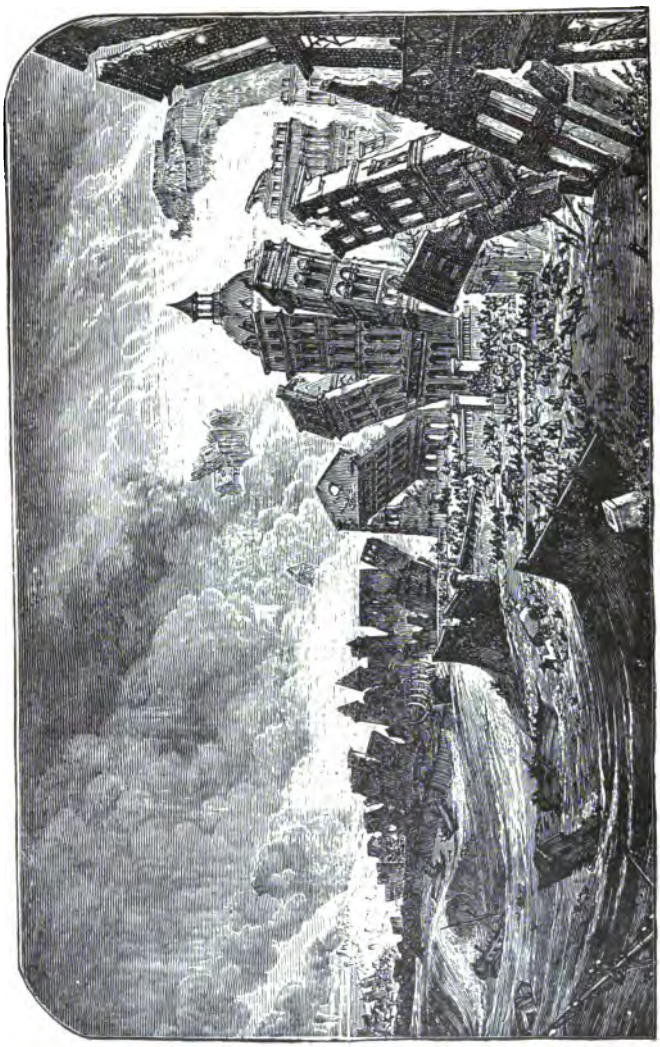
sea, when they have learned that sometimes the water was not very deep; then a few miles farther away it would be very deep. So they found the bottom of the sea was uneven. But though some of the mountains are so high, and in places the bottom of the sea is so deep, still, when we think of the great size of the earth, we shall see that this unevenness is but little, after all.

"We know that very great changes have taken place in the earth's surface. Countries that are now dry land have been covered by the seas, and no doubt what is now the ocean bed has been dry land. Great forces have been at work that have brought forth the dry land."

"But are these wonderful changes still going on, Father?" asked George.

"We sometimes see such forces at work now. In places, though not often in this part of our country, the earth sometimes trembles, cracks appear in its surface, and houses are overthrown."

"I remember reading that such scenes took place a few years ago, in Charleston, South Carolina," said Henry.



EARTHQUAKE, LISBON, 1775. (PAGE 82.)

"In some countries," continued Mr. Cartmell, "the land rises and falls, and huge waves from the sea rush over the land and carry death and destruction.

MOUNT VESUVIUS IN ERUPTION.

Who can tell what these movements are called?"

"**Earthquakes,**" promptly replied Fred.

"A noted earthquake once occurred

in Lisbon, in Spain, and a fine picture of it is shown in Guyot's Geography.

"In some parts of the world are mountains that seem to act as chimneys to the great heat inside the earth. Such mountains are called **volcanoes.**

COTOPAXI.

"From their summits smoke and flames rise, and sometimes there are thrown out great showers of dust and ashes, or streams of melted rock, called **lava,** pour down the mountain-sides.

"One of the best known and most

frequently visited volcanoes is Mount Vesuvius, near Naples, in Italy."

"Are there any volcanoes in the United States?" asked Florence.

GEYSER, NATIONAL PARK.

"Not now, though there were at one time; but in a country a few days' journey away the children of Mexico gaze on Mount "Popo," the Smoking Mountain, and in South America **Coto-paxi** is one of a group of volcanoes near

the city of Quito, in Ecuador. This last volcano is not always smoking.

"I have seen in the National Park holes in the ground, from which jets of hot water are thrown into the air. They look like fountains, and the water is so hot that men boil eggs and fish in the pools. They are called **geysers**, or hot springs. Volcanoes, earthquakes, and hot springs all seem to teach us that the inside of the earth is still very hot."

REVIEW.

A **volcano** is a mountain from which smoke, flames, ashes, and lava are thrown, as Mount Vesuvius.

An **earthquake** is a trembling of the earth's surface.

A **valley**, or **vale**, is a hollow between mountains or hills.

A **gorge** is a narrow, rocky passage; a **plain** is low flat land; and a **plateau**, or table-land, is high flat land.

DICTATION EXERCISE.

The hollow places between hills and mountains are called valleys, or vales. When small, they are named dales, or dells, and when very narrow, glens, or gorges. A low, level tract of country is called a plain. A high, level tract is called a plateau.

LESSON XVIII.

THE RIVER.

"Oh tell me, pretty river!
Whence do thy waters flow;
And whither art thou roaming,
So smoothly and so slow?"

"My birthplace was the mountain,
My nurse, the April showers;
My cradle was a fountain,
O'er-curtained by wild flowers.

"One morn I ran away,
A madcap, noisy rill;
And many a prank that day
I played adown the hill!

BIRD'S-EYE VIEW OF A RIVER.

"And then, 'mid meadowy banks,
I flirted with the flowers,
That stooped, with glowing lips,
To woo me to their bowers.

"But these bright scenes are o'er,
And darkly flows my wave;
I hear the ocean's roar,
And there must be my grave!"

LESSON XIX.

A LONG WALK.

"To-day," said Mr. Cartmell, "we will take a long walk beside the bank of the river that we saw winding through the plain a few days ago, and I will show you how rivers are made."

The boys were soon ready, but they were sorry the little girls must be left at home on account of the distance.

George, pointing to the high hills to which they had driven the day before, asked his father whether mountains and hills had any other use than to afford shelter from the winds.

"Oh, yes!" Mr. Cartmell replied. "Look at those tall heights, whose dark sides are laced with bright streams like strips of silver. Out of every crack and cranny, on every hillside and in every ravine, the rain which fell the other

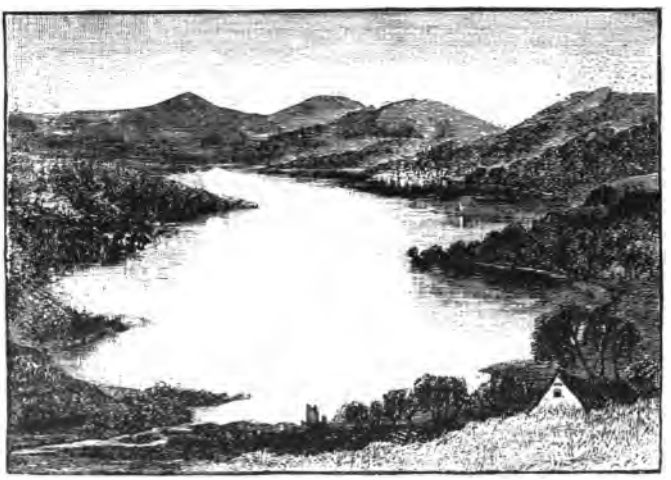
DISTANT RIVER IN A VALLEY.

night is trickling down the slopes till it gets into a hollow place, and is forming streams that make the hollows still deeper, bringing down mud as you have often seen streams do in the muddy streets during a smart shower of rain.

And as they reach the bottom, or base,

of the hills, many of them join together, and make the wide river which travels across this **plain** and flows into the **sea.**"

Henry wished to know if on their way home they would see any large **lakes.**



A LAKE.

"Yes; if not too tired, we will climb Roundtop, and get a view of Lake Waumbeck."

"Why are there lakes in some places and not in others?" George asked his father.

"Because the fresh water in some hol-

low places among the hills or mountains has been held back, and thus prevented from running down to the sea."

Little Fred asked whether all streams run to the sea.

"Yes," replied his father, "the deep sea is the home for nearly all rivers. You see that the stream runs in one direction only,—from the hills down to the plain, and then to the sea, which is lower still. You never find water running uphill.

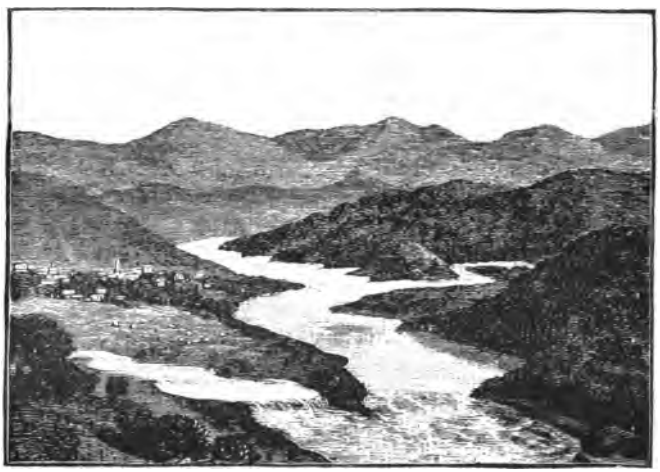
"In the streets, during a storm, it always moves **down**, and not **up**, the road, and at last it falls into a gutter or ditch. All streams run in valleys or through plains, seeking lower ground as they go, until they reach the sea, which is the lowest valley of all."

To trace the course of the river near which they were standing, they proceeded along the bank to discover its starting-point. The whole party walked briskly across the plain. The walk was uphill all the way, for they met the stream.

"Why does the river turn about, in-

stead of going in a straight line?" asked George.

"Because," replied his father, "it is on low ground. When we reach the hills, we shall find the stream leaping over cliffs and skipping quickly down steep places. Then it is not easily stopped in



THE TWO TRIBUTARIES.

its **course.** But when it gets down on to ground which is almost level it runs more slowly, and is soon turned aside by stones, or even hard patches of soil; and so it winds about like the folds of a serpent."

After they had walked for about two hours they found a place where another stream ran into the river, and then they rested for a while.

"This little stream which runs into the larger one," said Mr. Cartmell, "brings a tribute to the river. When a weaker country pays money to a stronger, it is said to give tribute; when people in other lands pay money toward helping a king or queen to govern them, and to make roads or railways, it is called paying tribute; and when we say anything in praise of a friend so as to increase his honor, it is said to be a tribute to him.

Thus you will see why this little stream is named a **tributary**, — because it contributes, or pays a tribute, or gift, of its waters to swell the river. It is also called an **affluent**, which means a 'flowing to,' because it 'flows to' the greater stream; and the place where the two waters meet is known as a **confluence**, which means a 'flowing together.'

There is another kind of stream, called a **torrent**, which flows rapidly in the winter, or rainy season, and in summer

is often much reduced, leaving a wide bed of stones and sand, with a narrow stream trickling down the middle."

When the little lesson was over, the

A WATERFALL. — THE SOURCE OF THE RIVER

father and the boys went higher up the river toward the hills, for the farther they walked the higher was the ground. In time they reached a pretty **waterfall**, where the stream leaped over a little cliff

into a pool below; they were then in a glen.

And when they had climbed the steep path at the side of the waterfall, they saw the narrow stream looking like a band of silver racing from the hill above, — too small to be called a river, but known as a **brook**, or **rivulet**, which are names for a little river. Then they walked still farther till they saw the stream gushing out among the rocks.

"There!" said Mr. Cartmell, "this **spring** — I mean the water 'springing' out of the rock — is the **source** of the river, or its birthplace.

"The whole distance from the source to the mouth is the **course** of the stream; and the running of the stream is its **current**, for current means running or flowing.

"You see that the water flows always in one direction, — down, down, down from these high hills, washing soil away as it goes, making a deep hollow, which is called the **bed**. The sides, which are like walls to keep it in its place, are called **banks**, and the groove

between the banks is known as the **channel.**

"You see that we are standing in a hollow place, with the hills sloping down toward the river. We seem to be in a kind of basin, and the tops of the hills form a rim, and this hollow space is really called a **basin,** down whose sides the water rolls into the valley at the bottom, which is the bed of the river.

"The stream drains away all the water from the sloping sides of the basin, and this process is called **drainage.** You notice the ridge of hills that forms the rim to the basin?"

The boys replied that they did.

"You can easily understand that there are slopes on the other side of the ridge, forming another basin down which water runs?

"That ridge parts the waters of this basin from those of the other basin, and is for that reason called a 'water-parting' or a **water-shed**; for it sheds one set of streams down toward us, and another set down the slopes on the other side."

"Mr. Cartmell," asked Henry, "where does all the water come from?"

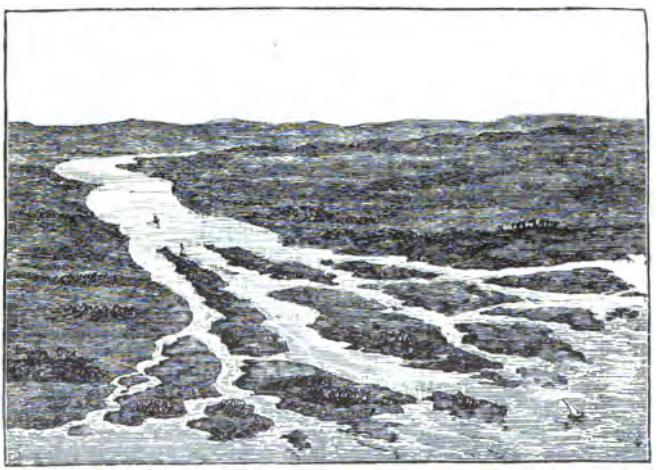
"It all comes from the 'chambers of the sky,' my boy," was the answer; "and it all flows away to the sea, which may be termed the 'chambers of the earth.' You can always tell which way the land slopes by the course of the stream.

"Sometimes the water which falls as rain or snow lies in large patches of moss, and gently oozes out so as to form a stream, instead of springing out of a rock. You have seen how a piece of sponge will hold water, and when left on the table will let the water out slowly till the table becomes quite wet?"

"Yes, father," said Master Fred; "I have seen that when using a sponge to clean my slate."

"That," said Mr. Cartmell, "is the way in which many rivers begin. The large patches of grass and moss on the hills are very much like a piece of sponge. Rain falls among the moss and fills it up; and snow will in winter melt away, and then the water trickles out slowly for a long time, and makes a running

stream which usually lasts till more rain falls. And the water sparkles out among the ferns, and courses down the hills into the valleys, chattering as it goes, always seeming to long for the sea,



A DELTA.

whither it is flowing; and the sea is the lowest valley of all."

"What is the difference between a **delta** and an **estuary?**" asked George of his father.

Mr. Cartmell took a pencil out of his pocket, and rapidly sketched two pictures as he talked.

"Both are the names of river mouths. **Delta** is used when the mouth of the river is divided so as to form islands, as in the sketch I am drawing, which will give you some idea of the many mouths of the Nile, one of the famous rivers of

AN ESTUARY.

Africa. We say **estuary** when the river's mouth opens wide like the St. Lawrence, in Canada, or the mouth of the river in the above picture."

Master Fred asked whether all rivers were made in this way, and his father

replied: "In some parts of the world the rivers are frozen into ice, filling the valleys many hundreds of feet deep, and then slowly sliding down into the lower parts of the country."

MUIR GLACIER, ALASKA.

"Can people walk on this river?"

"Oh, yes; it is frozen through from top to bottom. These masses of ice are called **glaciers**, and as they slide down into the warmer air they melt and throw off a stream of water from the lower end, — sometimes called the **toe**, — and thus make a river. And in very cold countries these glaciers are so large

that they will stand out for miles into the sea, and perhaps have huge pieces much larger than one of our churches broken off by the working up and down of the waves and the tide. And these large blocks, called **icebergs**, which

NIAGARA.

means 'mountains of ice,' often float away to sea, to the danger of ships that may be sailing in their course."

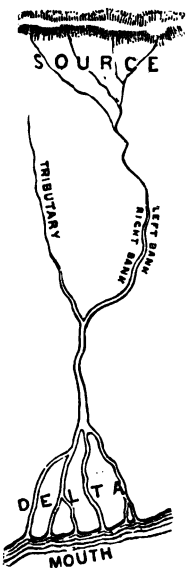
"What are rapids in a river?" inquired Fred.

"**Rapids** occur when the bed of the river is rocky and rough and the de-

scent gradual. There are several very noted ones in the St. Lawrence River, above Montreal."

"Are rapids and falls the same?"

"No. When the descent of the river is at one point as if over a perpendicular wall, it is called **falls**, because the water in the river falls so suddenly. Fred, can you tell me the largest falls in the world?"



SKETCH OF RIVER.

"Niagara."

"The Niagara River leaves Lake Erie at first as a broad and quiet stream; but the fall of the ground is very great between the two lakes, and the current becomes more rapid with every foot of descent.

"Farther on the banks contract, and the river, forced into a narrow sloping bed, dashes foaming through it until at last, about twenty-two miles below the lake, the surging mass of water, sepa-

rated by Goat Island, plunges, with a roar of thunder, over two broad ledges of upright rock."

George drew on a piece of paper a simple sketch of a river, and asked Fred to write the proper name near each part.

Let the children try it.

REVIEW.

A **river** is a body of running water.

A **delta** is a three-cornered plain through which a river runs by several mouths into the sea.

A **tributary**, or **affluent**, is a river that runs into another.

Glaciers are masses of ice that slowly slide down valleys very much like rivers.

Icebergs are ice-mountains floating in the sea.

DICTATION EXERCISES.

I.

The bed of a river is the land over which the river flows. Stone, sand, and mud are generally found at the bottom of the river. Some rivers wear a deep bed through hard rocks.

II.

Rivers frequently rise in lakes. Rapids and falls occur only when the land is not level. Rivers are useful as well as beautiful.

LESSON XX.

THE LITTLE RAIN-DROPS.

In a shaft of mist one bright summer day,
From a sunny pond where the lilies lay,
A shower of rain-drops floated away,
Merrily oh! for the sky.
They chased each other with lazy delight,
Until, spread like snow upon hillocks of light,
A glistening cloud of fleeciest white,
They travel the dome on high.

Hither and thither, wherever it will,
The warm breeze carries those rain-drops, until
Pride rushes forth their small bosoms to fill
As farther from earth they soar.

"Oh, who would lie in a stupid dull lake,
To quail with fear at the foot of each drake,
At the beat of a fish's fin to break,
Or tremble beneath an oar?

"Oh, who would be silent and cold and bare,
Under the shade of the willow-boughs there,
If they could mount up to these ships of air,
And through the vast heavens swell?
A little mean speck in the sunlight's glow,
The merest puddle so vulgar and low,
Is the pond where we all were born, you know.
But please, little boy, don't tell."

Now while the rain-drops were getting too proud
Of their high position within the cloud,
A sudden dark shade fell down like a shroud,
Hiding from them the sun's beam.

Cold blew the breeze; through their pulses it tore,—
They rush to each other, embrace, and pour
Down on the earth in a shower once more,—
Only the drops of a stream.

EMILY E. READES.

LESSON XXI.

STORY OF A DROP OF WATER.

By the light of a bright lamp the tired party, after they had taken tea, talked of rivers and waterfalls, springs and mossy heaths. The children, who were never weary of their father's teaching, were very much pleased with a story which Mr. Cartmell read, called

THE STORY OF A DROP OF WATER.

Up among the hills there is an old-fashioned farm-house, and near it a dell where a swift stream rests for a moment, after leaping from the rocks above, before it hurries on toward the sea.

It rests in a deep pool, so clear that you might count the pebbles at the bottom, and when the sun shines, the little fish cast a shadow on the white

AN OLD-FASHIONED FARM-HOUSE.

stones. All round about, the ivy clings to the rocks; and near to the spot where the water falls from above, a bluebell droops over the pool and is

sprinkled now and then with the spray of the stream.

At the edge of a flower-cup I saw a drop of water hang, and it seemed as if the flower were bending down an ear to listen to what the drop of water had to say. I said to myself, "I will listen too; for if my ears are too dull for such a tiny voice, perhaps my heart can hear." So I listened with my heart, and I will tell you what the drop of water seemed to say.

The bluebell wanted to know all about the travels of the drop. "You restless little drop of water," it said, "where do you come from, and whither are you going? I sit here all the day, in the sunshine and the rain. I am pleased with what God gives me, and I am very happy. I love the stream and the rocks, and the blue sky above; they are all so good to me.

"But still, before I die I should like to know what there is outside this little dell. The fishes never speak, and the birds only sing. It makes me glad to hear them; but they sing only about

their mates and their little ones, and something else which they say I shall know all about when I am dead. The bees come often to see me, but when I ask them about the world they say they know nothing of it; they have no time to think about anything but honey. So pray, little drop of water, tell me what you have seen."

And the little drop of water said: "Dear, pretty bluebell, I will tell you all I know, for in all my travels I never met with any one fairer than you. But I must be quick, for there are many thousands of us all having a race to the sea, and I cannot bear to be the last. I was born on a calm starry night, and I found myself resting in the bosom of a daisy. I looked around.

"There were thousands upon thousands just like myself, seeming to come out of the air and to go to sleep on blades of grass and in the cups of flowers. I heard a purling noise of water just below me, and then I could see that there was a tiny little rill pushing its way among the roots of

the grass. Then there came a great light, and a little breeze went trembling all among the leaves and flowers.

"At that a thousand thousand sleeping drops woke up, and leaping into the little rill, went racing along. I joined them, and we ran on down grassy slopes facing the morning sun. I was so bright and glad then that I ran faster and faster, till I slid over a smooth broad stone, and found myself in a deep, strong stream, between high woody banks.

Then all at once the world seemed to open out before me. For one moment I could look down a steep mountain height, and away over sunny fields, and waving woods, and curling smoke. For one moment only; then I was lost in a struggling, shouting, whirling maze of drops that seemed to have lost all their senses.

"Some cried, 'On with you! away!' Others cried, 'Back!' Some said, 'Here, this way!' Others said, 'No, that way!' But not one of us could help himself at all. I was dashed against a hard

rock, flung back again, spun round and round, pushed under a shelving stone, and then I took a leap right into the air.

"Away I went; I was not at all scared, you know, because this was just the sort of thing I was born for. So I flew down, down, down through the air, and I felt the sunbeams rattling against me all the way; and then they would spring back and dance round me in rings of green and gold and red and blue.

"You can have no idea how pleasant it was. But it was soon over, and then I found myself at the bottom of a waterfall, in a broad and quiet river. Here I moved on more slowly for some time; then I was sharply pushed into a narrow channel; and just as I was thinking how this was to end, I was plunged into a deep, dark hole, where I had to grope and stumble among the spokes of a great wheel that went splashing round and round.

There was a grumbling noise like thunder not far off, but I did not stop to find out what it was; I ran along as

fast as I could, and was glad to find myself out in the broad river again.

"By and by we came to a town where large ships could float on the water. If you saw them you would wonder how little water-drops such as we are could bear them up; but I suppose we must be very strong, for we felt them no weight at all.

"'Now,' we said to one another, 'we shall soon reach the sea.' But that was not so easy as we had thought; for all at once we met a vast host of salt-water drops marching straight against us.

"'Let us pass,' we said, 'for our home is in the sea.' But they would not listen; they came pouring along with great force, and drove us back for a mile or two.

"Then they sharply turned and said, 'Come along—it was only our fun.' And so we all swept out together among the rolling ocean waves. Oh, it is a free and happy life there! No banks to bind you in, no channels to force you this way or that. Rising and falling, rolling and swaying hither and thither,

springing into the air, playing with the sunbeams, and then plunging back into the heart of gloomy waves; it is the heaven of water-drops, to which we are always trying to get back.

CLOUDS.

"But I was not to stay there long that time. A vast foaming billow shook me off its crest. A gust of wind caught me and carried me aloft. Then I fainted in the hot sun, and knew nothing more till I woke again on a bank of silver

cloud that glided before the wind toward the distant hills.

"It was pretty to see the ships with their white sails flitting over the water, and the shadows of the clouds racing over the broad, bright surface. But as

CLOUDS AGAINST THE MOUNTAINS.

we floated on we left the sea behind. Nearer and nearer came the hills; it grew darker and darker as we approached. Then a chill, wet wind met us, and we shook with cold; then we began to fall, and knew that we were turned into a shower of rain.

"I fell into a slit in the rock, and groped my way along in the dark through many windings and turnings, till in a moment I felt a bustle and pushing all around me, and among a troop like myself I burst into the sunlight again, and raced after the rest round and round a rocky basin fringed with fern.

"After many mazy circles I found my way out, and was hurried along to the top of the fall that brought me to your feet. Farewell! farewell, little flower! Let me away to my heaven in the sea. God tells you to rest here, but to me He gives no rest except in the great sea. No matter where I may be, in cloud or rainbow, in stream or river, always the one thing I crave is to get back to the sea."

Then the drop fell, and I saw it no more.

LANGUAGE LESSON.

Write out from memory this story of A Drop of Water.

DICTATION EXERCISES.

I.

The water rises from the sea in vapor, then it gathers into clouds, and the clouds are blown by the winds over the land. The cold air on the tops of the mountains causes the clouds to send down showers of rain, and the water runs down the rills and rivers into the sea.

II.

If there were no sea there could be no clouds; if there were no clouds there could be no rivers; and if there were no rivers the land would be a desert. But cloud and river and sea all work together that the earth may be kept bright and beautiful.

LESSON XXII.

EVENING SONG.

Lightly we row! Swiftly we go!
Floating down the stream.
Bend to the oar! Lower and lower!
We're gliding as in a dream.

Sweetly on high glows the bright sky,
In evening's colors drest,
While one bright star gleams from afar,
And birds now sink to rest.

See the wild flowers, like fairy bowers,
Gleaming on the bank;
While the tall trees stand at their ease,
Like soldiers in a rank.

Down from the hills we come with the rills,
After our holiday!
O'er the gay earth we've run in our mirth;
How glad has been our play!

Kindly we part! Love in each heart
To God who happiness gives!
Singing His praise, we'll walk in His ways,
And serve Him while each of us lives.

LESSON XXIII.

A TRIP TO THE SEA.

Henry told the Cartmell children so much about the seaside and the great ocean, that they became very anxious to see that part of the world, and in August, Mr. Cartmell took the trip. To make it as interesting as possible, he selected for his visit that very part of the coast where the river, whose source they visited in June, has its mouth.

On that eventful Monday morning the four children were awake almost as soon as the sun had peeped over the hills. Breakfast was over early, and Mr. Cartmell and his family were driven to the station in season for the morning express. All were happy in fond hopes of the pleasures before them.

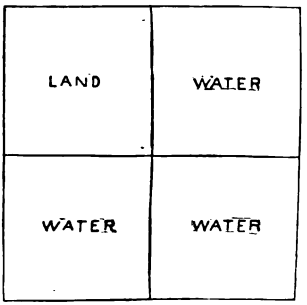
On their journey they talked about ships and fish, boats and shells, the great **ocean** and the **beach.**

"Our teacher told us the other day that there was more water than land

on the surface of the earth. Is that true, papa?" inquired Nellie.

Mr. Cartmell took out his pencil and a piece of paper and said,—

"Yes, Nellie. See; I draw a square to represent the surface of the earth. Now I divide it into four squares. I write **land** in one square and **water** in the others; how much then is land, and how much water?"

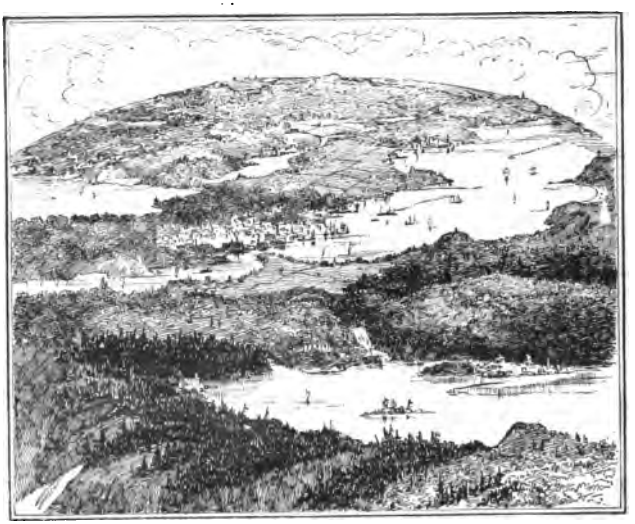


"One fourth is land and three fourths water."

"But on the real surface of the earth," continued Mr. Cartmell, "the land is not all by itself, as I drew it on this paper. We shall see at the **sea-shore** that land and water are scattered about in different places. To help you realize this I have brought with me two pictures of the surface of the earth. In the first one I show you, we are supposed to see a large part of the earth from a distant object like the moon. In the second

picture (see page 149) we are supposed to look down upon a smaller part of the earth from a balloon or lofty mountain peak."

The children derived much pleasure

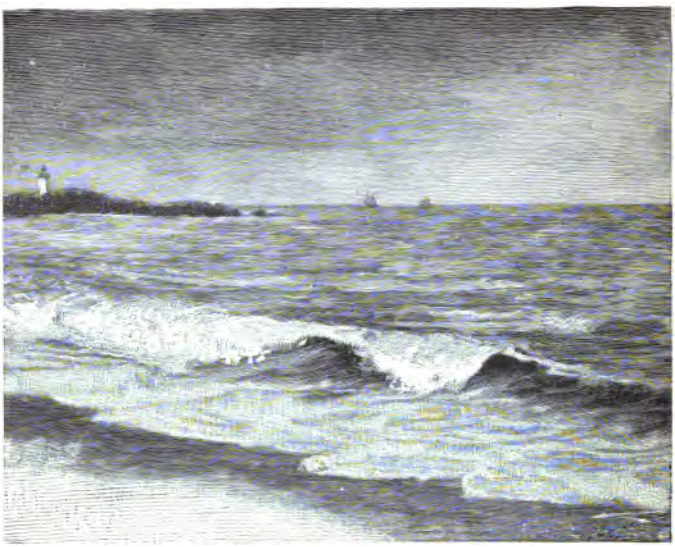


SURFACE OF THE EARTH.

as well as information from these views, and the kind explanations made by their father.

When they reached the little town, the boys clapped their hands for joy, and could hardly wait while a home was found, so eager were they to look on

the broad waters before the sun went down. And the first view filled their hearts with gladness. "What a pretty sight!" said George; and his little brother was lost in wonder.



THE SEASIDE.

"You have often asked me to bring you to the seaside," said Mr. Cartmell; "now, what do you think of it?"

"Think of it!" cried Florence. "I can't think at all, it is so grand!"

Then they watched in silence as the sun went down.

Next morning they were at the water-side early, and took their seats on the sand.

"Oh, how wide the sea is, Father!" said Fred.

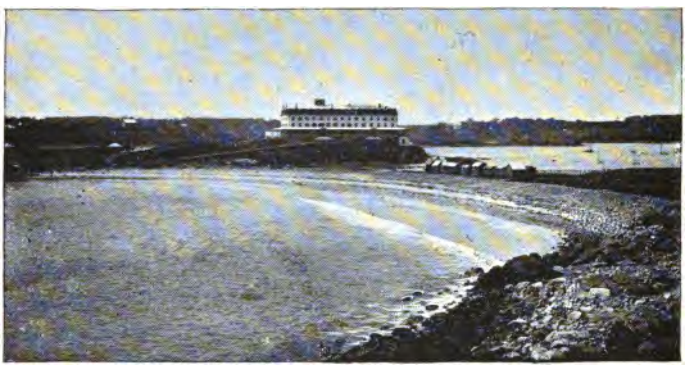
"I cannot see the end of it," added George. Nor was it likely that he could, for it was many hundreds of miles wide, and the sky seemed to dip into the sea far away. George was by no means a dull boy; he saw that the sky and the sea seemed to meet, and he quickly asked what lay beyond.

"More water and more sky," replied the father. "If we could stand where they appear to meet, and were to look beyond, we should see still more water and sky, looking as if they joined many miles farther off. Perhaps I may explain that some other day."

Little Fred started with surprise, and called out at the top of his voice, "Oh, what are those birds like ducks?" He had seen a flock of white sea-birds fly down to the edge of the water, where they sometimes strutted about in the mud to pick up food, and sometimes

dived down into the water, just as ducks do in the ponds and rivers at home.

"Those birds," said Mr. Cartmell, "are called gulls; they live for weeks together, flying about over the sea or swimming in the water, and when they come to



THE BEACH (MAINE).

land they make their home in the rocks and caves and banks near to the sea."

The waters rose up in the air like little hills, and fell down again, and so they kept tossing about. Those hills of water, with furrows between the hills, tipped with white spray like wavy snow, are called **waves.** The sea is always rising in waves, which fall again,

always on the move; and during a storm they leap and roar, and splash about with great force, tossing, as Mr. Cartmell said, "as high as the old barn at home."

"Look!" cried little Nellie; "see how they roll on the land, almost to our feet!"

"Yes," said the father; "you see that as soon as they touch the land they break; it is then that they are called **breakers.** As they roll up the bank they wash along the pebbles and sand, and then slide back again."

"See!" said George, in an excited tone; "the water is much nearer to us now than it was when we sat down!"

"Exactly," replied the father; "and unless we move higher up the bank, it will wash over us."

The boys asked how far the water would rise; to which Mr. Cartmell replied,—

"We shall see by and by. It will go on rising, little by little, for about six hours; and then go lower, little by

little, for six hours more; and then rise again, and again fall.

"That motion forward and backward is known as the **tide.** When the sea comes a long way up the bank, and makes the water deeper, so that boats can float nearer to the town, it is called high tide. The rising of the water is called its **flow.** When the water has gone down to the lowest place, about six hours later, it is called low tide. The falling of the water is called its **ebb.**"

Far out at sea the waves tossed in the air, and seemed to sport in the bright sunlight as though they were at play. When they rise to a great height they are often called mountain waves.

The party spent several hours in watching the motion of the sea and in walking about the beach, until dinner-time arrived, when they made their way back.

LANGUAGE LESSON.

Write five statements about the sea.

DICTATION EXERCISE.

That part where the land and water meet is called the beach, or coast, or sea-shore. The waves break as they reach the shore. When the water is at its highest, we say it is "high tide;" and when the water is at its lowest, we say it is "low tide."

LESSON XXIV.

AT SEA.

A wet sheet and a flowing sea,
A wind that follows fast,
And fills the white and rustling sail,
And bends the gallant mast.
And bends the gallant mast, my boys,
While like the eagle free,
Away the good ship flies, and leaves
Old England on the lee.

"Oh for a soft and gentle wind!"
I heard a fair one cry;
But give to me the snoring breeze
And white waves heaving high.

STEAMSHIP.

And white waves heaving high, my lads,
The good ship tight and free;
The world of waters is our home,
And merry men are we.

There 's tempest in yon horned moon,
And lightning in yon cloud;
But hark the music, mariners!
The wind is piping loud.
The wind is piping loud, my boys,
The lightning flashes free;
While the hollow oak our palace is,
Our heritage the sea.

ALLAN CUNNINGHAM.

LESSON XXV.

A WALK BY THE SEA.

Early the next morning our friends left the town by a winding path, which

SEA AND ROCKS.

led them up a steep hill to the top of a rocky cliff, whence they had a wide view of the open sea.

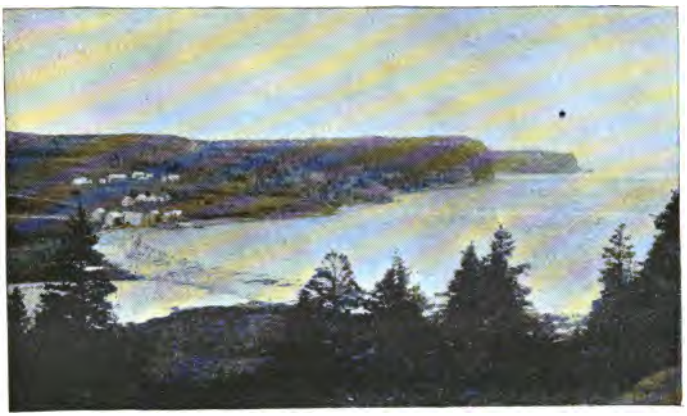
"There," said Mr. Cartmell; "now we have a fine view of a rough sea, and can enjoy the stiff breeze. You see that the sea is not as calm in the distance

as it is here. It has more room to play about, for there is nothing to break its great waves; but here, under our feet, the long lines of waves are broken when they strike against these rocks.

"Land and water almost always form a pretty sight, but they are never finer than when a bold rock is met by a stormy sea. This rock stands straight up at the water's edge like a giant soldier on the watch against an enemy.

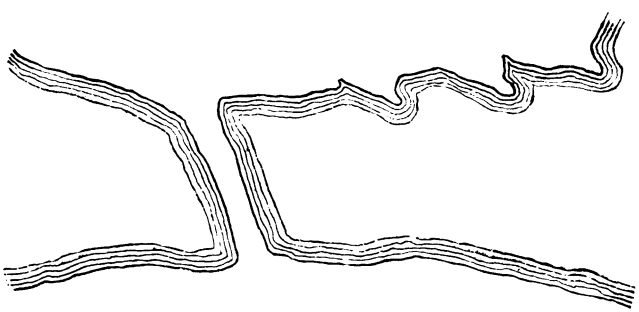
"The waves come along, rolling and foaming, till they dash against the rock with a roar almost like thunder. They seem as though they were shouting, 'Out of the way! What business have you here?' And the rock is quite silent; it stands calm and firm in the sunlight, and the spray is dashed from its breast. The waves go back, quietly for a moment; but when they have got far enough out to take another spring, they roll up once more, and rush madly to the shore."

The children listened with deep interest, as though they had been hearing a romantic story.



PICTURE OF A BAY.

Mr. Cartmell then said: "This open place below, partly enclosed by the rocks, is called a **bay.** It is shaped,



A MAP OF THE SAME BAY.

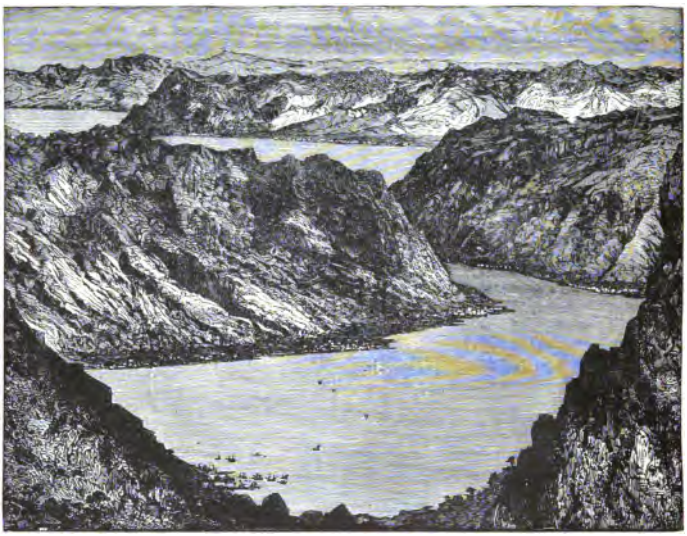
you see, almost like a horse-shoe. What else have we at home shaped like it?"

"Our bay window," said Fred.

"Yes," said Mr. Cartmell. "Does it not bend half round, and give more space to the room inside?"

"Of course it does," said George.

The father then explained the like-

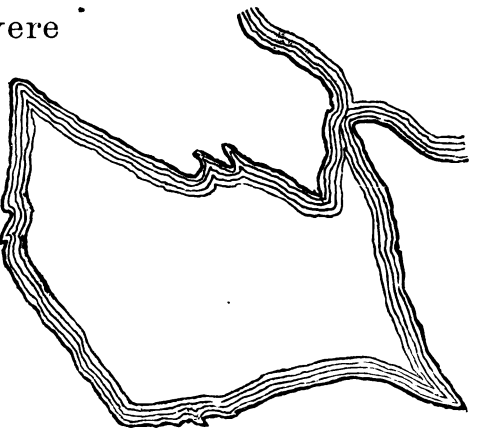


PICTURE OF A GULF.

ness of the two, and showed how on either side the shore was almost in a straight line, but looked just at this spot as if some monster had bitten a piece out from between the rocks, so that the sea spread its waters into the shore, and gained a little extra space.

From this arch being called a bay, he said, they gave the same name to their window, as the room in the house gaining extra space was like the sea pressing farther forward.

"If it were wider and much deeper, like the picture I showed you the other day, it would be termed a **gulf**."



A MAP OF THE SAME GULF.

While they had been talking, the tide had gone down so far as to leave a strip of land quite dry at the foot of the rocks. The boys wished to go down to the edge of the water and fish on the rocks; but how were they to get there? It was too far to jump.

"We must go back a little way," said Mr. Cartmell. They passed round the back of one of the rocks, and found a

path which had been made where the hill was not so steep.

"Away you go, and I will follow at my own pace," said the father.

"Come along, Fred," shouted George; "let us see which will get to the bottom first."

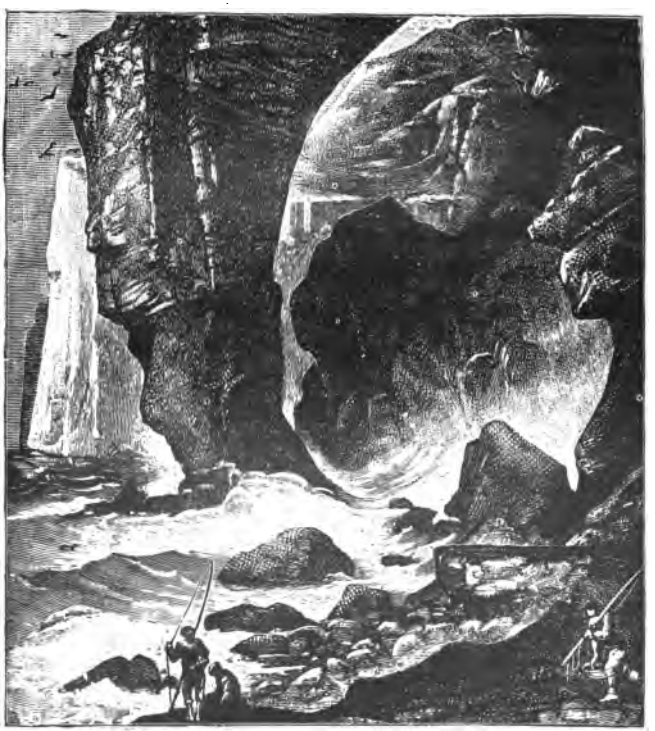
A GULF.

Away they raced, full of glee and fun, and were at the foot of the cliff before their father had walked half-way down. Their running now came to an end, for the beach was very stony, and their feet sank among the pebbles at every step. The father and his sons walked along among the stones till they reached a rock which hung over the beach almost like a shelf, and looked as if it might fall over and crush them.

Mr. Cartmell asked the boys if they could guess how the lower part had been cut out; and George said that

perhaps the boatmen had scraped it out to make a place of shelter in a storm.

"A good thought, and not without



CLIFFS AND ROCKS.

reason," was the father's reply; "but not exactly right. What is it that brings the soil down from the hills after a storm?"

"The rain," called out both the boys at once.

"Exactly," said Mr. Cartmell.

"But," said George, "the rain cannot have washed out all this hollow place under the rock."

"No," said their father, "but the sea-water acts in a similar manner. We have seen the strong waves come rolling up the shore and dash at the foot of this rock."

"Do you mean the tide, Father?" asked Fred.

"Yes," was the reply. "You remember how the **tide** rolls up the land farther and farther for a while, and then returns step by step till it is very low indeed?"

"Oh, yes!" said George; "coming up to its highest place every twelve hours."

"That is right," said Mr. Cartmell. "Well, just now it is going down, and so leaves room for us to stand here under this cliff. But in a few hours the busy waves will roll over the spot where we now rest, and will rush into

this hollow place with a force that will carry stones along, and dash them forward till they chip small grains off the rock, and wear it out a little more. It is just in this way that the cliff, which was once upright, is now losing its lower part, and you may be sure that this ledge will come toppling over when its support has been cut out a few feet more."

George and Fred both said that they hoped it would not fall while they stood there.

"Scarcely likely," replied their father. "Perhaps it will come down a piece at a time, but come down it must in the end; and in falling so far it will no doubt break in pieces. And then the waves will roll the stones over the lumps, day by day, and grind off their sharp corners until they become pebbles, just like these which cover the ground where we are now standing."

"And is that the way pebbles are made?" asked Master George.

"There is no other way," said Mr. Cartmell. "All these stones, large or

small, once formed part of rocks,—some perhaps of the very rocks we are looking at,—and many were washed here by the sea from other places. In some parts we see only sand washed up by the sea; but sand is made of pebbles, which are ground by the sea to powder."

All three at the turn of the tide began to fish for cunners, or salt water perch. In a short time they caught more than three dozen.

REVIEW.

A **bay** is a bend of the sea into the land, with a wide entrance.

A **gulf** is an inlet of the sea, cutting deeply into the land, frequently with a narrow entrance.

DICTATION EXERCISE.

The sea-shore is sometimes covered with fine sand, and sometimes with pebbles. In some places there are rocks only, and these are often covered with sea plants. In some places the coast is low, and at others the sea is met by high cliffs.

LESSON XXVI.

THE FOUR WINDS.

High and low
The spring winds blow!
They take the kites that the boys have made,
And carry them off high into the air;
They snatch the little girls' hats away,
And toss and tangle their flowing hair.

High and low
The summer winds blow!
They dance and play with the garden flowers,
And bend the grasses and yellow grain;
They rock the bird in her hanging nest,
And dash the rain on the window-pane.

High and low
The autumn winds blow!
They frighten the bees and blossoms away,

And whirl the dry leaves over the ground;
They shake the branches of all the trees,
And scatter ripe nuts and apples around.

High and low
The winter winds blow!
They fill the hollows with drifts of snow,
And sweep on the hills a pathway clear;
They hurry the children along to school,
And whistle a song for the Happy New Year.

BUSY-WORK.

Write out the names of all the things in the lesson; as kites, hair, bees, etc.

LANGUAGE LESSON.

Write in your own words the ideas expressed in any two of the above stanzas.

LESSON XXVII.

A BOAT-RIDE ON THE OCEAN.

Mr. Cartmell knew that the proper way to impress his lessons was to make his children happy while learning. He asked if they would like to go in a boat, and you may be sure that they were very much pleased with the idea.

They returned to the town, and after dinner went out for the row, for the sea had become very calm since the early morning. They had not been gone more than an hour, when the boys were charmed with the sight of a high cliff that seemed to frown like a giant on the sea beneath.

"Do you know," asked Mr. Cartmell, "what that high place is called?"

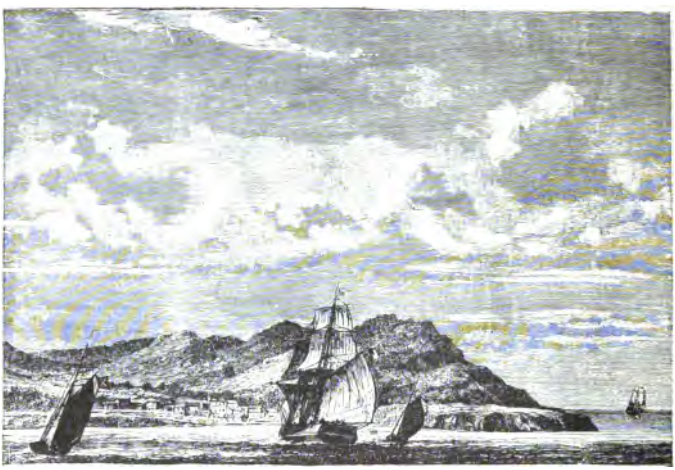
"No, Father, except a cliff," replied George.

"It is called a **cape**," said his father.

"What a funny name! Why, I wore a cape last winter," exclaimed Fred.

"Yes," said the father, "it sounds

strange to you, but there is a good reason for it. When sailors see from afar a bold piece of shore standing high, and pointing into the water, the sight appears like that of a great beast lying



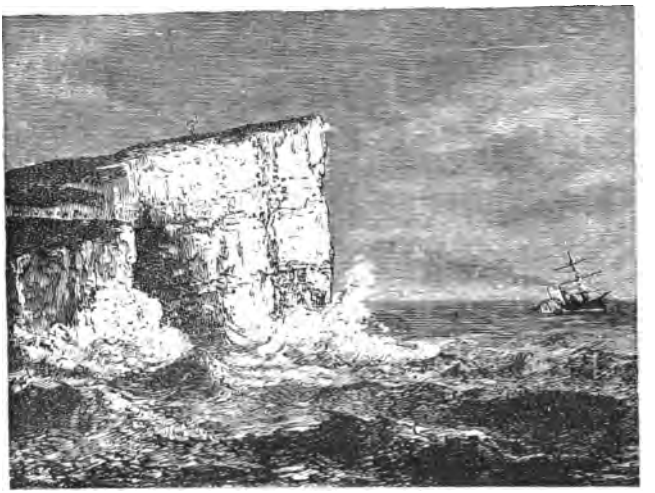
A CAPE.

down, with its **head** to the sea. It was some fancy of this kind that led sailors to call such places **heads.**"

"I thought you said they were named **capes,**" was the remark of Master George, who did not soon forget what he had once heard.

"I did," replied the father; "but 'cape'

in a foreign language means 'head,' and so **headlands** are spoken of as 'capes.' Fred says he wore a cape last winter. Now, the reason why such garments are called capes is this, that very old-



A PROMONTORY (ENGLAND).

fashioned capes used always to have hoods to cover the head.

"They were looked upon as garments to cover the head rather than the shoulders, and hence they were called, in a foreign language, 'cape,' because 'cape' means 'head.' It seems very odd that a great hill standing out into the sea

should be called by the same name as a little boy's cape; but now we see the reason of it. The one looks like a head, and the other was once made to cover the head; hence they are each called **cape**, or **head.**"

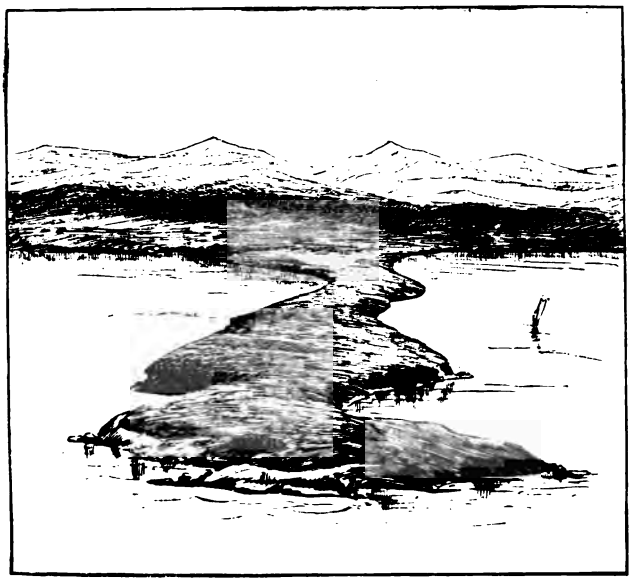
A POINT (MAINE).

"Are capes always the same size?" inquired Florence.

"No. They vary to a great extent. When a cape stands very high it is called a **promontory.**

"If the land is rather low it is known as a **point**, as it is then like a piece of the land pointing out farther than the line of land on either side.

"If the land jutting out into the water is both long and wide, too large in fact to look like a head or cape, it is called a **peninsula.** Such a piece of land

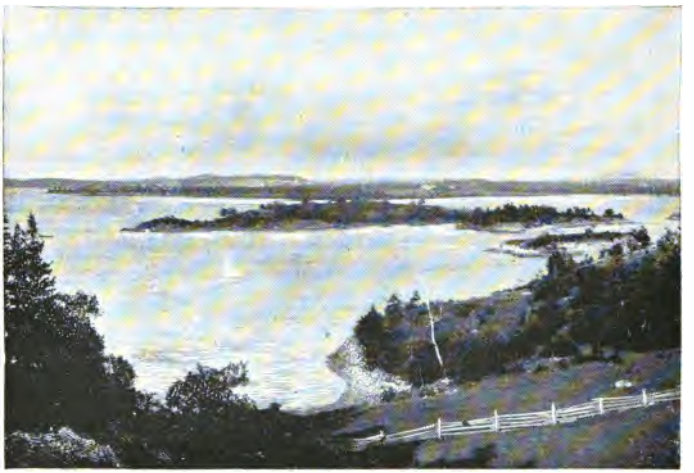


ISTHMUS AND PENINSULA.

has water on both sides and at the end. It is almost surrounded by water, and so it is called an **almost island,** or **peninsula.**"

"Father," said Florence, "is there any name for the piece of land which joins the peninsula to the coast?"

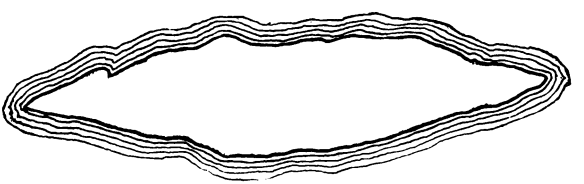
"Yes. What part of your body does it resemble?"



PICTURE OF AN ISLAND.

"The neck."

"That is right; and so it is called by a word which means neck, namely, **isthmus**."



MAP OF THE ISLAND.

Several small **islands** were seen off the coast, one of which they rowed en-

tirely around, to help the girls realize that water touched it on every side.

On their way home, to save time, they rowed through a long and narrow channel connecting the ocean with the harbor.

A STRAIT.

"This," said Mr. Cartmell, "will give you a fine idea of a **strait.**"

At one end of the strait on a small promontory, stood a large, strongly built **lighthouse**, which interested the children, as they had never seen one before.

Before reaching the wharf, George

asked whether the waves ever threw ships against any of the rocks they had seen that afternoon.

The boatman said he had known of one case.

A LIGHTHOUSE.

"In bad weather, to avoid wreck, the sailors try to get into **harbor.**"

"A harbor! What is that?" asked Fred.

"If you were on land and a storm came up, where would you run to?"

"To some place of shelter."

"That is just what sailors do when they can," said the boatman. "When

A HARBOR (MAINE).

a storm is coming on, they try to find a haven, or **harbor**, a place for their ships, sheltered from the strong winds and rough waves.

"Natural harbors are arms of the sea;

AN ARTIFICIAL HARBOR.

that is, a place where the sea runs a long way into the land, as if it stretched its arms into it. There ships may be safe from the wind and waves."

"But," said Master George, "they cannot always find such places."

"No," replied the boatman. "In rocky and shallow places vessels may be dashed ashore, or perhaps on a rock that lies only a few feet under water, and be broken to pieces. Although so near land as we are, in a wreck the brave sailors might all be drowned; for it is no easy matter to swim in a rough sea. Very likely that piece of timber which you see floating here is part of a vessel that has gone to pieces."

"On some coasts the people build artificial harbors," said Mr. Cartmell.

"What would they do if they could not find a harbor?" asked Florence.

The old boatman explained that they must either ride out at sea and bear with the bad weather, or seek some shallow part where the vessel could lie at anchor.

CHIEF FORMS OF THE
EARTH'S SURFACE

BUSY-WORK.

1. What is the opposite of Gulf? Draw it.

2. What is the opposite of Isthmus? Draw it.

3. What is the difference between a Point and a Promontory? Draw both.

4. What is the difference between a peninsula and an island? Draw both.

5. Sketch other forms seen on page 149.

DICTATION EXERCISE.

If we sail in a boat along the coast we shall find the edge of the land to be very much broken. Here a tall wedge-like cliff, there a bold headland; here a long peninsula, there a low cape. These all push forward, like giant fingers, to meet the ever-rolling waves.

LESSON XXVIII.

THE LIFE OF THE OCEAN.

PART I.

The Cartmell children enjoyed the sea-shore more and more the longer they remained. They not only made daily visits of discovery on the coast,

as described in the previous lessons, but they began to study the new kind of life found along the beach.

Almost every day excursions were made all along the shore in search of the best specimens of sea life.

"What is this, Papa?" asked Nellie one pleasant morning.

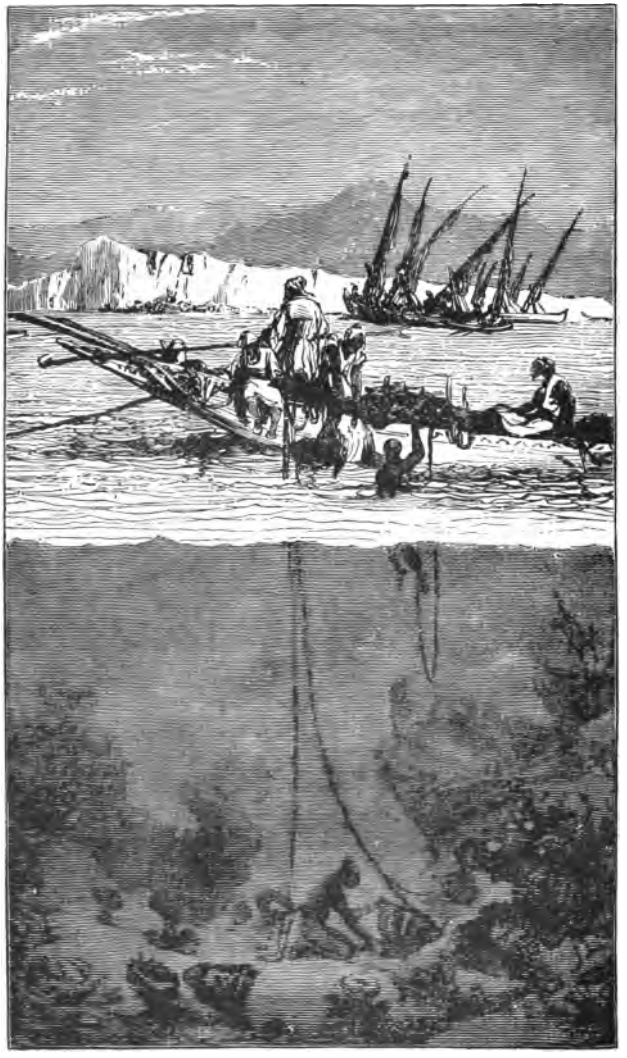
"That," replied Mr. Cartmell, "is a poor specimen of the strange animal so familiar to you as a **sponge**."

LIVING SPONGE.

"A sponge an animal!" exclaimed both Nellie and Florence.

"Yes. It is first a little egg, then a small oval animal which propels itself in the water by means of a fringe of fine hairs. After moving about for some time, the young sponge at last settles on a rock, spreads itself out, and becomes a jelly-like animal."

"If the sponge is an animal, it must



SPONGE GATHERING.

eat something, I suppose," remarked Florence.

"The sponge derives its food from the water in which it lives. The water is constantly moving through the different parts of the sponge. The bathing-sponge is simply the skeleton of the real animal, as it lives at the bottom of the ocean."

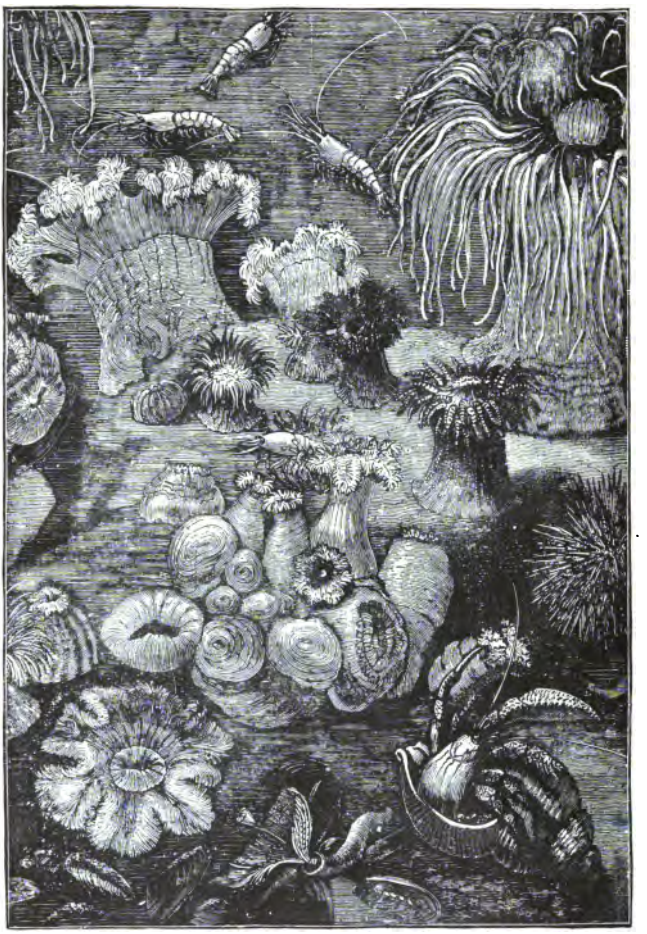
"How do they get the sponges from the sea bottom?"

"Why, men dive down and cut or tear them off the rocks. The divers carry nothing with them except a netted bag tied to the body, into which they put the sponges.

"Most of our sponges come from off the coast of southern Florida. The best sponges are found in the eastern part of the Mediterranean Sea. What did you find to-day, Florence?"

"I found some strange ocean flowers. Do come with me and watch them."

When Mr. Cartmell reached the place, and looked at what Florence had found, he remarked,—



SEA-ANEMONES.

"You have indeed a large and beautiful collection of sea-flowers, or sea-

anemones. There are half a dozen different kinds.

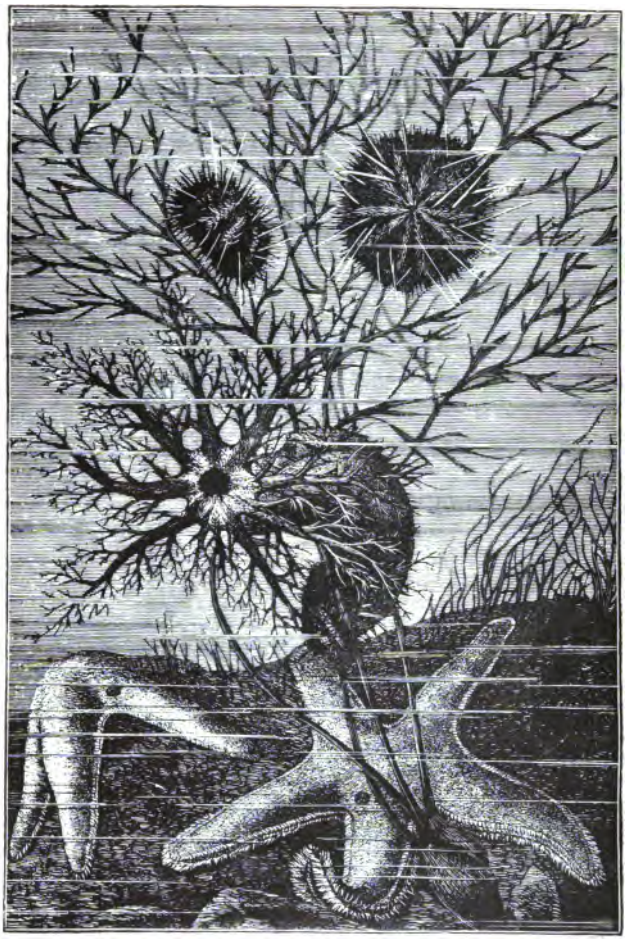
"Now, watch their movements. See the upper part of the object slowly expand, and throw out arms called **tentacles.**"

While they were looking at the largest specimen, a small crab touched one of these arms, when it was instantly seized, dragged toward the mouth, and sucked down into the stomach, very much as a land animal swallows its food.

"I have something to show you, Father," cried Fred, holding up a **sea-urchin,** a **sea-cucumber,** and a **star-fish.**

"If you will put the **star-fish** in a glass vessel filled with salt water," said Mr. Cartmell, "you will see it slowly expand. It will place its hundreds of little feet against the side of the vessel, and by means of these suckers climb to the top. In the centre of the star-fish is found its mouth, and at the end of each ray is a compound eye, easily noticed as a bright red spot."

"But, Father, this one seems dead."



SEA-URCHIN; SEA-CUCUMBER; STAR-FISH.

"Quite likely; for they are great actors, and pretend to be dead when out of the water. A stranger habit is

shown in their eating. They have several extra stomachs and very good appetites, and are very fond of oysters, which they suck out of the shell."

"I saw one the other day with only four arms instead of five," said Fred.

"That is not unusual. A star-fish never cries at the loss of an arm, for in a few weeks another grows out just as good as the one lost.

"What does the **sea-urchin** resemble, Florence?" asked Mr. Cartmell.

"I should say a chestnut-burr."

"I think it looks more like a hedgehog," suggested Fred.

"Fred is nearer right this time. Their spines are sometimes a foot long. The color of the animal is usually a reddish brown. They are very shy, and try to conceal themselves in holes and crevices of the rock. They eat sea-lettuce and other plants.

"The **sea-cucumber** is similar to the other two you found, Fred. It lives in deep water, preferring muddy bottoms. The mouth is a circular opening

at one end, surrounded with a wreath of plant-like arms ready to carry food to the hungry creature. In this mouth are five teeth which move toward a common centre, and not up and down as in most animals."

RED CORAL.

"Are corals found along this coast?" inquired Florence.

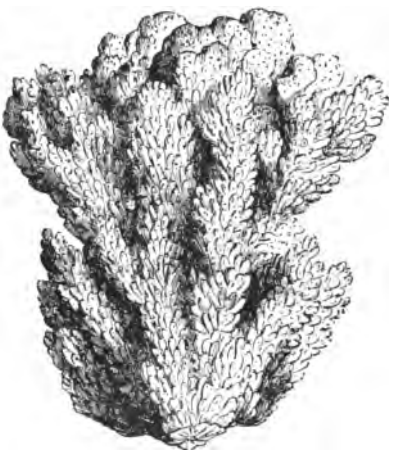
"No," said her father; "they are found only in warmer climates.

"The **corals** are very much like these creatures Fred has found, but much smaller. The coral forms such as we generally see are only the skeletons of the living animals."

"Tell us about the red coral Uncle John gave me," said Nellie.

"The red coral begins at the sea-bottom and grows up into a kind of stem, and out of that stem grow

branches. Thus a little tree is formed; but at the ends of the branches, instead of flowers or buds, there are the open mouths of the little coral creatures. Most of the red coral comes from the Mediterranean Sea, but I have seen some fine specimens from the East Indies.



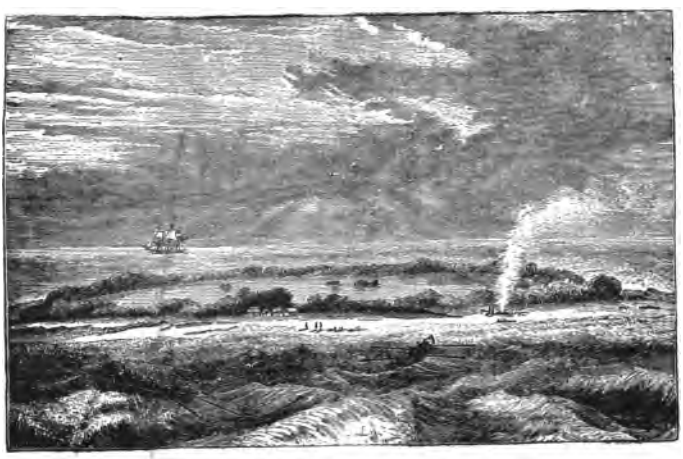
WHITE CORAL.

"The white coral, instead of building up trees, usually builds more solid masses, till they rise at last to the surface of the sea, making many of the islands of the Pacific Ocean."

"Do coral islands look like the islands along this coast?" asked Fred.

"No. These coral islands are usually ring-like in shape, with a circular lake of shallow water in the middle, and a small opening on one side leading out to the great ocean. They are called

atolls. These islets vary in size from two miles in diameter to ninety. The breadth of the ring is about half a mile and its height seldom over ten feet, so these low islands cannot be seen from a long distance. The first idea of their



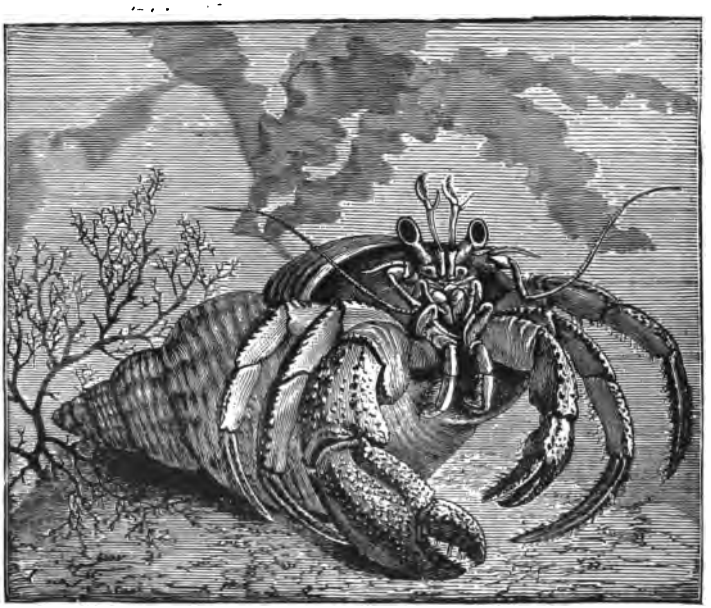
AN ATOLL.

nearness is often conveyed to the seamen by the roar of the heavy surf on their windward sides."

"See! George is running toward us. I wonder what he has," exclaimed Nellie.

Soon George came up to the rest of the party and laid down his treasure.

"I found this crab and shell in a pool beyond the Point. Does this shell belong to this kind of a crab?" asked George.



A HERMIT CRAB.

"It belongs to him inasmuch as he has selected it for his home, but the shell is not a part of his body. It once belonged to a very different creature, called the whelk, or winkle.

"The first business of this crab is to

find a shell of suitable size into which to thrust the soft part of its body, and thus prevent the too eager bites of hungry fish.

"If shells are plenty the crab examines them very carefully, and finally selects the one his eye admires. Here he lives in peace till some other crab after a severe contest drives him out. Sometimes the crab prevents this by placing his larger claw before the mouth of the shell as a front door. On account of his lonely life this crab is called the **hermit crab.**"

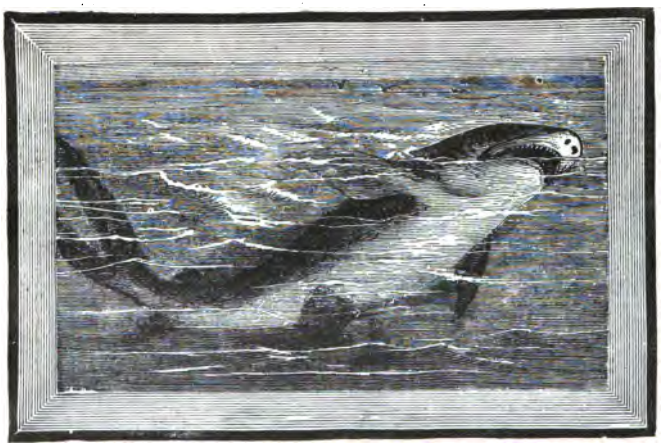
Each one of the children, carrying his prize with him, now turned his face toward home, as it was nearly dinner-time.

PART II.

In the afternoon the Cartmell family walked over the Seaview path, and at one of the stopping-places fell in with a sailor who proved to be quite social. The boys took advantage of this excellent chance to ply him with questions.

"Did you ever see a **shark**?" was Fred's first question.

"Oh, yes," replied the sailor, "I have seen thousands of them. No other animal I know of has such a wicked look. All sailors hate the shark, and with the



A SHARK.

best of reason. He is always ready to make a meal of any poor sailor who happens to fall overboard near his presence. He will follow a ship hundreds of miles, hoping for some such dinner."

"What does he look like?" inquired George.

"Well, he is from fifteen to twenty-

five feet long. His mouth opens underneath his body, and it is armed with triangular teeth as sharp as a razor. He generally has six rows of these teeth arranged so as to lie flat if not needed, but when wanted, he can throw them up, in an instant, to seize his prey."

George wanted to know if sharks were hatched from eggs like other fish.

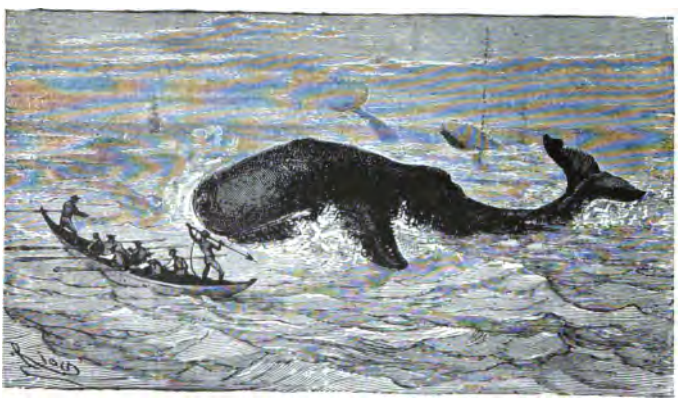
"The shark usually deposits only two eggs, which are oblong in form and furnished with cords. By means of these cords the egg is securely moored to the stalk of seaweed until it is hatched. The empty egg cases are often found on the shore, and we call them 'sailors' purses.'"

"Please tell us where the shark is found," said Florence.

"I have found him almost everywhere. The white shark is numerous in tropical waters, and the kind to be most feared, as he is the largest and the swiftest."

"Is not the whale a fish?" Fred asked.

"The **whale**," replied the sailor, smiling, "is frequently called a fish because it lives and swims in the water, but it is really more like many land animals. Its young are fed like a calf; its skin is smooth and without scales; its blood is warm; and its flesh tastes like coarse beef."



A WHALE.

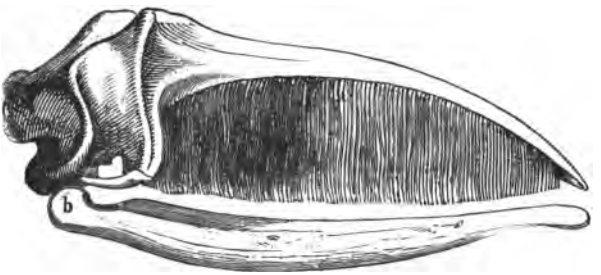
"Does it have gills, Mr. Sailor?" Florence asked.

"No. It has lungs just like a cow, and so it has to come frequently to the surface of the water to breathe. The whale easily keeps warm because it is surrounded by a thick layer of fat, en-

abling it to withstand the most severe cold."

"Tell us what kinds of whales you have seen."

"I have seen several **Greenland** whales in the north. They are sometimes seventy feet long, the head very large, but

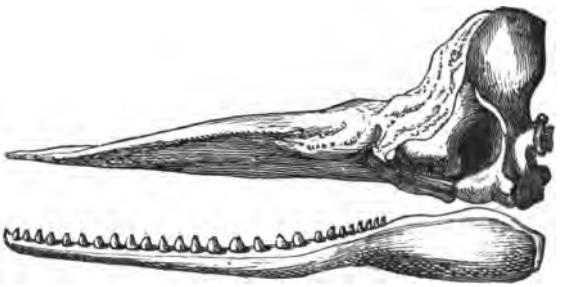


SKULL OF GREENLAND WHALE.

the gullet so small as not to admit an animal larger than a herring. No matter how old these whales grow, they never cut their teeth, but the teeth remain in the gums. Numerous plates of whalebone, fringed with hairs, take the place of teeth, and form strainers for separating from the sea-water the little animals upon which he makes his noonday meal."

"What does he eat for his dinner?"

"He feeds on shrimps, sea-bugs, sea-blubbers, and little animals which float on the surface of the water; so when his lordship feeds, he swims rapidly along the surface of the water with his mouth wide open.



SKULL OF SPERM WHALE.

"The **sperm** whale is noted for his great head, which is nearly as long as the rest of the body. He has fifty-four teeth in his lower jaw. Sperm whales swim in herds, and are eagerly hunted, as their oil is the best for burning."

"How fast can a whale swim?"

"I never timed one, but I should judge about five miles an hour. He usually comes to the surface to breathe every ten minutes, and remains above

about two minutes; but whales can stay below half an hour without renewing their breath."

"You never saw a **white** whale, did you?" asked George.

"Oh, yes," replied the sailor with a happy laugh. "It is the most common of any, and the smallest, never growing to be over twenty feet long. This is the only kind ever captured alive. It is frequently seen in aquariums. When put in a large tank, it moves about constantly in one direction, sometimes diving up and down, splashing the water with its tail, and spouting a stream now and then through its blow-hole into the air."

LANGUAGE LESSON.

Write a letter to your mother about the life of the ocean.

BUSY-WORK.

Draw pictures of the ocean life mentioned in this lesson.

ICEBERGS IN SMITH SOUND.

AT HOME AND AT SCHOOL.

PART II.

LESSON I.

A COLD COUNTRY.

PART I.

Merry Christmas had come again, and the Cartmell children, as usual, rose early, to examine their presents. Much to their surprise they found nothing in their stockings.

What could it mean? Had father and mother forgotten them?

While crossing the hall Fred stumbled over a large box. Bringing a light, he found that it was directed

To My Children,

Lake View.

From Papa.

Eagerly opening the box, they found within a large **magic lantern**, with all necessary arrangements for using it, such as a lamp, a screen, a box of slides, or photographic pictures taken on glass, and several other things.

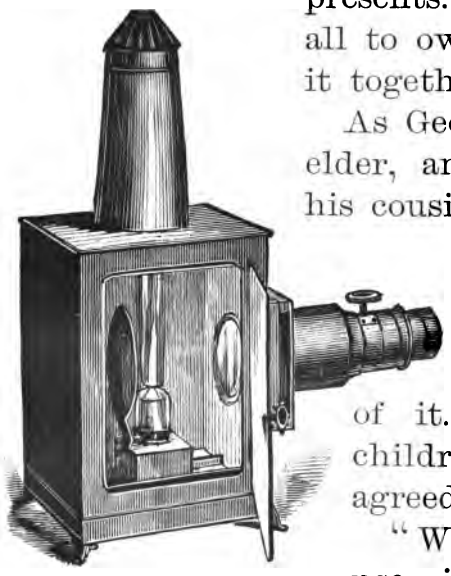
"What is it for?" eagerly inquired Nellie.

"To show pictures with," said Fred.

"Where are the pictures?" asked Florence.

"I have them in this box," said George. "We must be careful of them, for they break easily. Now we can give exhibitions in the evening. Cousin Henry has one just like this. I saw it last summer."

Mr. Cartmell soon came into the room, and explained to the children that their parents decided to give them this year one large and costly present, like this magic lantern, instead of several small presents. They were all to own and enjoy it together.



MAGIC LANTERN.

As George was the elder, and had seen his cousin Henry use a similar lantern, he might have special care of it. The other children cheerfully agreed to this.

"When can we use it?" George inquired.

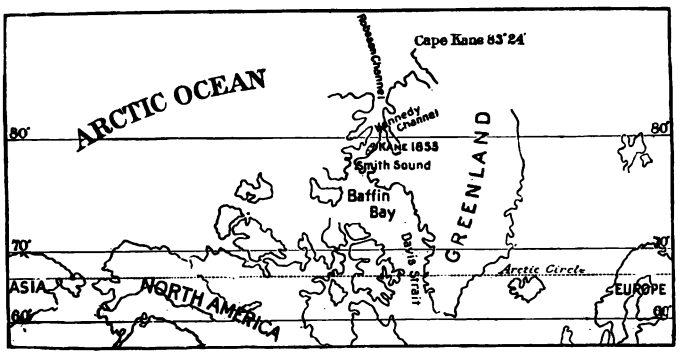
"Friday evenings will be a suitable time," said Mr. Cartmell.

"May I invite my teacher, Miss Gray?"

"Certainly. She will enjoy the pictures."

Mr. Cartmell, after making some selections from the box of slides, gave to each of the children a few pictures to study, and tell about at the appointed time.

When Friday evening came, George placed his lantern upon the table in the centre of the room, and lighted the lamp



MAP OF GREENLAND.

within. He hung his screen over the bookcase at one side. The pictures, when thrown upon the screen, were increased in size from three inches to four feet in diameter.

The first picture George threw upon the screen was a map of the cold country.

Mr. Cartmell explained: —

"As cold weather has come again, I have selected for our first study the very cold country of **Greenland.** Can you all see its location on the map? How would you describe its position, Fred?"

"It is in the northeastern part of North America, very near the North Pole."

"Most of it is in the North Frigid Zone," added Miss Gray.

"How far north it extends we do not know," continued Mr. Cartmell. "Many brave men, such as Davis, Baffin, Franklin, Kane, Hayes, Hall, Markham, De Long, and Greely, have tried to reach the northernmost point of Greenland, and to go far enough to reach the North Pole.

"They have all failed to do either of these things, on account of the snow, ice, and intense cold.

"Two young men who went out with Greely in 1882 reached 'the farthest north.' Their names were Lockwood and Brainard.

"They had no friends to cheer them on

this lonely walk, and no warm houses in which to take shelter. When weary, they slept in sleeping-bags. The thermometer once showed the cold to be 61 degrees below zero.

"On a high point which they called **Cape Kane**, and which is named on the map, they unfurled a beautiful silk flag. This point was about four hundred miles from the North Pole."

"My friend Arthur," said George, "has seen some flowers which these men plucked in a sheltered nook near Cape Kane."

The next pictures presented by the young showman were so beautiful as to call forth much praise. They were snow and ice scenes.

"When does snow first come in Lake View?"

"This year it came on Christmas Eve," said Nellie.

"In Greenland," continued her father, "it falls first in August, and by October about three feet have come. The cold rapidly increases, and during most of the year the streams are frozen into

solid ice. Some of these frozen rivers are miles in width.

"The end of the ice-river is pushed out into the sea, and by the action of the water and its own weight huge blocks of ice are broken off with a noise like

SURROUNDED BY ICE.

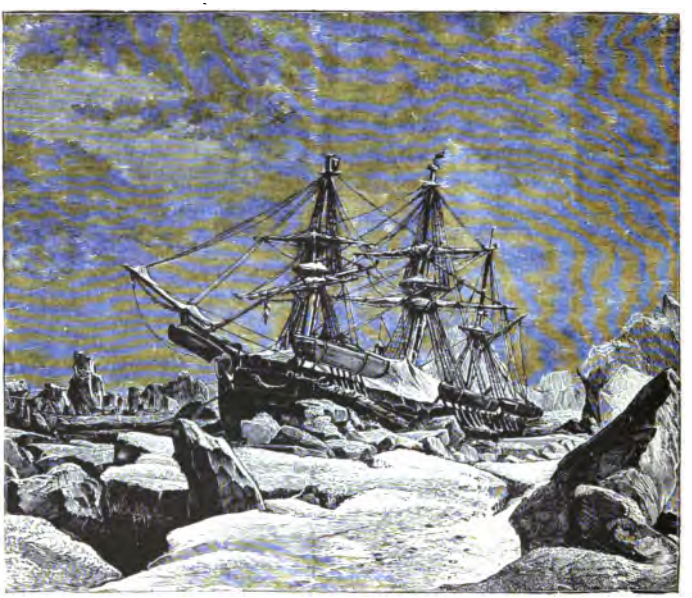
thunder. The larger ones are called **icebergs.**

"Some of them are much larger than a church. Those shown in the pictures are nearly four hundred feet in height above the water."

Mr. Cartmell now asked Fred to bring in a small piece of ice in a tumbler of

water. They all noticed how the ice sank in the water.

"If the icebergs in the pictures are floating, as they seem to be, they must



THE SHIP "TERROR" IN THE ICE.

be more than two thousand feet in height. They are sometimes one fourth of a mile wide."

"I do not wonder," Florence exclaimed, "that they toss great ships about as if they were egg-shells."

"I believe," said Miss Gray, "that more than half the ships which have carried the brave men, already mentioned, to these ice-fields for discovery and research have been hemmed in the ice, like the 'Terror' in the picture, and at last crushed to pieces."

LESSON II.

A COLD COUNTRY.

PART II.

"Now, Nellie," said Mr. Cartmell, "I believe it is your turn. Have you found anything to read about the houses in the cold country?"

"Yes, Papa; in the book you gave me."

So Nellie read the following account:

"The **Eskimos** do not know how to make nice houses such as we live in. They live all winter in **huts**. These huts are often made of logs of wood which have drifted to their shores from some other country, for no trees of any

size grow in Greenland. Sometimes the huts are made of stone and sod.

"If the Eskimo cannot find anything better, he makes his little house of hard snow. The snow is frozen so hard that

ESKIMO SNOW-HUTS.

it will not melt. It keeps in shape all through the winter. Sometimes, when the hut gets very warm with the lamps and the people and the dogs, the walls begin to drip a little; but he takes a piece of fresh snow, and soon mends the place.

"No matter of what material he builds

his house, the size and shape are about the same. The hut is shaped something like a thimble, and is generally about ten feet in diameter and five to six feet high.

"The strangest thing about it is its entrance, which is a covered passage-way, ten to twenty feet long, and just large enough for a person to enter on his hands and knees. The entrance is thus made to keep out the intense cold.

"The windows are not made of glass; no one can make glass in this country. The window is a piece of ice, or a part of the seal which is thin and will admit light and keep out the cold.

"Is not the snow very cold?

"Oh, no; the hut is as warm as the Eskimo can bear it. He has no fire, either.

"How does he warm it, then?

"By his lamp. His lamp is nothing but a vessel like a saucer, which is full of oil. A great many little wicks float on the oil, and he lights them all, and this makes the room warm, and gives a little light.

"A cooking-pot hangs over the lamp.

"Does he have any chairs or tables?

"Not such as people in the United

HANS, AN ESKIMO.

States have. There is a seat all round the hut. It is covered with warm skins, and serves to sit or lie upon. But if you take a peep under the skins, you will see that the seat is made of snow or stones.

"When the warm weather comes, the

Eskimo is glad to get away from the snow-hut. Its walls begin to drip, and he gets wet as he lies in bed. He lives in a tent all summer."

AN ESKIMO WOMAN.

"What next, George?" inquired his father.

"I show you next a picture of Hans, an Eskimo who visited Dr. Kane in Greenland."

"And that will show the clothes the Eskimos wear. Who will tell about the dress?"

"I will try to, Papa," said Florence. "Men, women, and children dress very much alike, so as to keep out the cold. They wear on the upper part of the body a jumper or closely fitting shirt made of fox-skins. It has a hood fastened on behind to cover the head when needed. The Eskimos wear neither hats nor bonnets. The mother carries her baby in the hood."

"Under the outer shirt is an inner one made of bird-skins, chewed in the mouth by the women until they are soft. It is worn with the down next the body. Five hundred auks are sometimes used to make one garment," added her mother.

"The legs are protected by a pair of bearskin breeches. The women sometimes ornament these with a little bright color."

"Are their shoes and stockings like yours, Florence?"

"No, indeed. The feet are covered

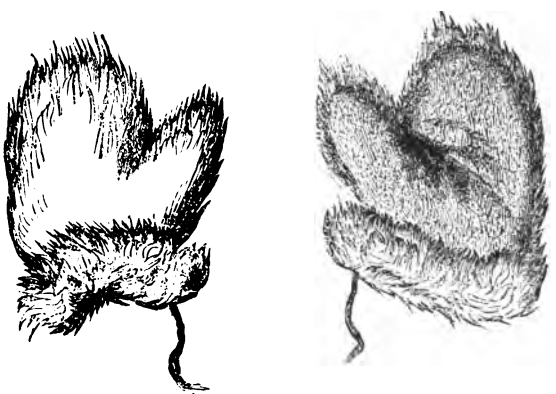
first with bird-skin short socks, then with a padding of dry grass.

"Over this is drawn the bearskin leg, with the natural sole of the bear still attached, and which form the shoe."

"Do they wear any mittens?" inquired Nellie.

ESKIMO SOCK AND SHOE.

"Yes; their mittens are made of sealskin, wadded with straw. They frequently wear mittens, but often go without hats, especially the women, and boys of the age of Paulik.



SEALSKIN MITTENS.

"How do the women dress their hair, Florence?"

"They always tie it in a knot on top of the head."

PAULIK, FOURTEEN YEARS OLD.

"Do Eskimo children have any **games?**" inquired Mrs. Cartmell.

"Yes, Mother," answered Fred. "In the picture George is showing us now the Greenland boys are playing the

lively game of hockey, or shinty. Slip-Su (the handsome boy) and his friends are enjoying this game on the hard snow. A walrus-rib answers for a stick, and the hurly is made out of a

ESKIMO BOYS AT PLAY.

round knob of a flipped joint. Roars of laughter mingle with eager cries as the game progresses. I learned about it in Dr. Kane's book."

Miss Gray said that she had read about the girls playing with dolls and doll-sleds.

BUSY-WORK.

Draw some of the pictures in the text.

LESSON III.

A COLD COUNTRY.

PART III.

"Miss Gray, are there any **live animals** in this cold country?" asked Nellie.

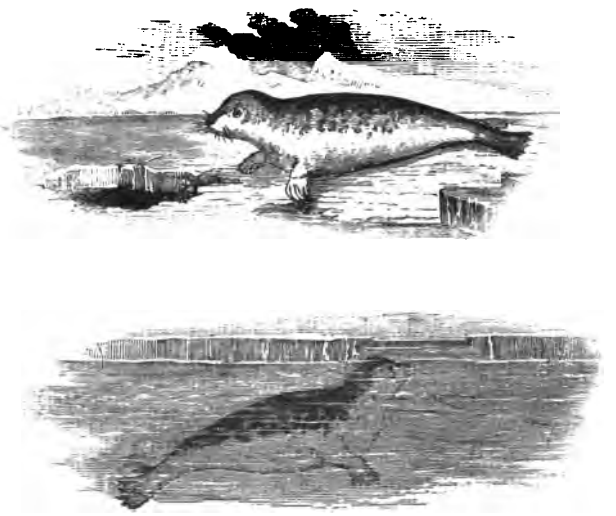
"Yes. There is great abundance of life, such as different kinds of birds, white and blue foxes, the Eskimo dog, the great white bear, the musk-ox (now rarely seen), the seal, so well known for its intelligence, the walrus, and the whale."

"Please tell us about the seal."

"The Eskimos almost live on the **seal**, as they obtain from it food, clothes, and oil for heating and lighting their huts. Therefore they take much time and trouble in hunting this animal.

"The seal is very cunning, and does not mean to be caught if he can help it. The Eskimo studies his habits, and acts accordingly. The seal, like the whale, has lungs, and must come to the surface of the water to breathe.

"In winter, when the sea is covered with ice, the seal makes a number of breathing-holes through the ice, to which he comes now and then for a breath of air. The hunter sits down



SEAL-HOLE.

near one of these holes and watches quietly for the seal to come. He may have to wait for hours. When at last the seal appears, the hunter drives his spear into his body and captures him."

"How large is a seal?" asked Florence.

"He sometimes weighs two hundred pounds, and is from five to six feet long. When the hunter returns home with his prey, there is a general rejoicing. The women bring out their cooking-pots and prepare the feast. The skin is carefully removed. The hungry children snatch up bits of raw seal, and eat them with the same pleasure you girls eat candy."

"Do the boys know of any other way of catching seals?" Mr. Cartmell inquired.

"Oh yes, Father; there are several," replied George. "I will now throw on the screen a picture of a more modern method. In the warm spring days the seal likes to come up on the ice to bask in the sun and take a nap. But he seems to sleep with his eyes open. He always rests near his hole or a break in the ice.

"The hunter, raised upon his sled, approaches him very cautiously, concealed behind a sail. When within shooting distance he aims through the sail, then makes a sudden noise, on

hearing which the seal lifts up his head, as in the picture, and at the same instant the hunter fires."

"That is a very good account, George. The Eskimos often attempt

SHOOTING SEAL.

to kill a much larger animal, called the **walrus**. Dr. Kane tells us how Myouk and his friends once killed a walrus which weighed seven hundred pounds.

"'The party approach as near as possible to a walrus-hole. Soon the water is in motion; a large walrus rises near Myouk. He plunges the harpoon under

the left flipper, and then runs for dear life, paying off freely the rope tied to the harpoon. He drives a bone pointed with iron into the ice for a peg, and

A WALRUS HUNT.

fastens the rope around it. Now comes the struggle.

"'The ice about the hole is dashed to pieces by the wounded beast; the line is drawn out at one moment and then loosened. Then there is a crash of the

ice very near Myouk's position, and two walruses appear. Down they go again, and Myouk quickly changes his position. It is well he does, for next time they come up exactly where he had been standing.

"'At last a second wound is given, and after hours of conflict the walrus is killed.'

"Who can tell us about the **dogs** in Greenland?" asked Mr. Cartmell.

"I can," eagerly replied Fred. "There are no horses in that country; they could not live. Dogs are used in place of them. The Eskimo dog is of medium size, squarely built, resembling the wolf, from which he is said to have descended. His color is frequently gray, although some dogs are black, with white breasts, and some are entirely white.

"The fur is quite long and very close together. It makes good clothing for the natives. These dogs have generally pointed noses, short ears, and bushy tails.

"In each pack there is one dog which

is always master of all the dogs, — a kind of major-general."

"Dr. Kane," said Miss Gray, "brought home one of these leaders, called Toodla.

AN ESKIMO DOG.

I have seen his stuffed skin in Philadelphia."

"If these dogs," continued Fred, "are treated kindly, have good care and plenty of food, they become good-natured, affectionate, and trustworthy, like other dogs in other lands.

"The Eskimos by their cruel treatment of these dogs from the very beginning make them wolfish, snapping, thievish, and savage."

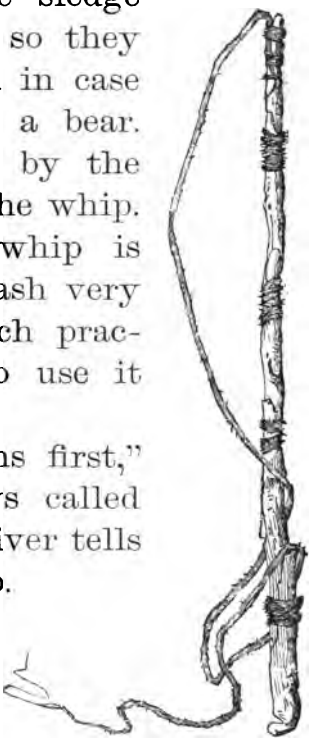
"I once saw," said Mr. Cartmell, "in the British Museum, an Eskimo sledge, which was made wholly of pieces of bone and leather

ESKIMO SLEDGE AND DOGS.

"The runners were about five and a half feet long, seven inches high, and three fourths of an inch thick. The different pieces of bone were carefully fitted and lashed together. The runners were about fourteen inches apart, and the uprights used for handles were made of walrus ribs. Such sledges cost so much, and are so valuable, that they are handed down from one generation to another."

"How are the dogs fastened to the sledge, Papa?" inquired Florence.

"By a very simple harness of bear-skin, attached to the sledge by long traces, made so they can be quickly untied in case the dogs run across a bear. The dogs are driven by the use of the voice and the whip. The handle of the whip is very short and the lash very long, so it takes much practice to learn how to use it skilfully."



A WHIP.

"The dog that runs first," said Fred, "is always called the leader, and the driver tells him which way to go.

"If the man says 'Nannook,' the dogs will run as fast again as they did before, because Nannook is the name in that country of the fierce white bear."

"Papa, can you or George tell us something about the **polar bear?**" in-

quired Nellie, who likes to learn about animals.

"The white polar bear," replied Mr. Cartmell, "is nearly as large and fierce a creature as the grizzly bear in the Rocky Mountains. The polar bear is often called the 'ice bear,' because he is so much at home on the ice. He can run very fast. He can swim as well as a fish. To help him in swimming, his toes are joined together like the toes of a duck.

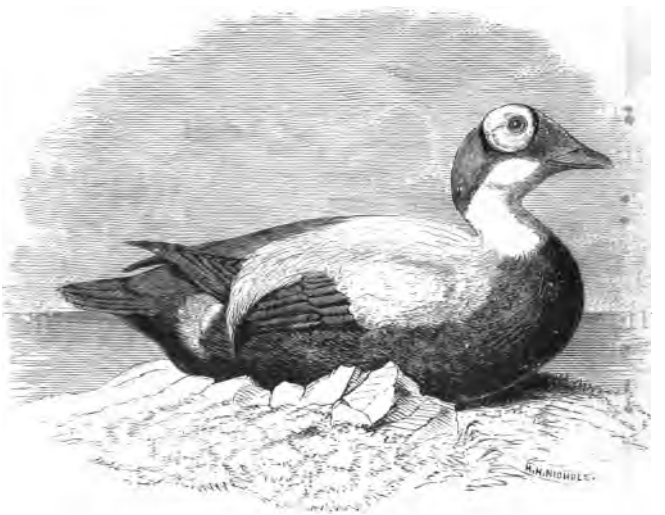
"Savage as the white bear is, he loves to play. One of his sports is to slide down ice-hills on his haunches."

"Are there any **birds** in Greenland?" asked Florence.

"Yes," answered Miss Gray. "They have a large variety of birds, including sea-gulls, wild geese, the little auk, great auk, ptarmigan, diver, penguin, and eider duck.

"The female **duck** is brown and homely, but the male, shown in the picture, is black, with cream-colored breast and neck. On his head he has beautiful tints of green

"The homely female is a very devoted mother, and lines her nest with down plucked from her breast. This is called 'live down.' The same material taken from the bird a moment after death is worthless, because it is



THE EIDER DUCK.

not at all elastic. There are so many of these ducks on certain islands in Baffin Bay that they are called the Duck Islands."

Mrs. Cartmell inquired at this point what the people eat in Greenland.

Mr. Cartmell replied:—

"They do not have a great variety of food. The native Greenlanders do not eat bread, but dried fish, dried flesh, flesh with blubber, seal oil, mussels, seaweed for vegetables, and sea-birds. They use barley and peas boiled

UPERNAVIK, GREENLAND.

with meat for soup. All the people, old and young, are very fond of coffee."

The last picture George showed was one of **Upernavik.**

He made the following explanation:

"All the great Arctic explorers have visited this place, which is the most northern town in North America.

The name means 'Place of Spring.' It is on an island facing the sea, and exposed to icy winds and fogs. It has rather a desolate and dreary appearance. Large heaps of snow are seen near by, even in July.

"A little vegetation grows in the gardens near the houses. There are a few more houses in the place now than can be seen in the picture, including a small church and a comfortable home for the missionary.

"In winter the sun for seventy-nine days is below the horizon, and for thirty-nine days it is very dark. The great event of the year is in July, when the ship from Denmark makes her annual visit, bringing supplies and news.

"The population of this town is less than one hundred."

LANGUAGE LESSON.

Write what you can remember of Greenland, the cold country.

LESSON IV.

A HOME UPON THE ROCK.

Disco Island is one of the largest islands in Baffin Bay. It is situated south of Upernavik. The island, according to Dr. Hayes, is over one hundred miles long, and everywhere shows lofty cliffs of hard rock. On the south side of the island there is situated a fine harbor, which the Danes have very properly named Godhavn (Good-harbor). There are a few houses in the place. In one of them the Danish inspector lives, surrounded with his happy family, and most modern comforts, although he is three degrees north of the Arctic Circle. This is the "home upon the rock" referred to in the following poem, taken from Hayes's "Land of Desolation."

DISCO ISLAND.

A rocky islet in the sea,
A lonely harbor on its lee,
The roaring surf around!

Chill are the winds and cold the sky,
Dead in the dells the flowers lie,
The snow is on the ground!

A desert drear as e'er was seen;
It seems as if there has not been
A trace of human life!
I write again. Upon the rock
I 've found a home, a loving flock,—
A husband, child, and wife.

And thus it is,—here Greenland frowns:
The name to others harshly sounds;
'T is everywhere the same!
If we but taste the sweets of love,
It matters little—rock or grove—
There 's nothing in a name.

God bless that home upon the rock!
God bless that happy, loving flock,
And keep them from all harm!
My bark again bounds o'er the sea;
Away, away once more I flee
To nothing half so warm!

LANGUAGE LESSON.

Write a letter to your teacher, answering some of these questions:—

1. *What present was given the Cartmell children in the story?*

2. *What did they do with it?*

3. *How and where are icebergs formed?*

4. *How do the Eskimos make their huts?*

5. *How do they dress?*

6. *What games do the boys play?*

7. *What can you tell about the seal, dog and walrus?*

8. *What do you remember about "the home upon the rock"?*

DICTATION EXERCISES.

Greenland is a very cold country near the North Pole. Icebergs are formed there; some of them are hundreds of feet in height. The Eskimo lives in a hut made of stone, sod, or snow. How does he warm the hut? By his lamp.

The Eskimo wears neither hat nor bonnet. The men and women dress very much alike. In Greenland are found birds, foxes, polar bears, seals, and walruses.

"How are the dogs fastened to the sledge, Papa?" inquired Florence.

"By a very simple harness of bear-skin," replied Mr. Cartmell.

A WORKING ELEPHANT IN INDIA.

LESSON V.

A HOT COUNTRY.

PART I.

On the following Friday evening another country was studied with the help of the magic lantern.

"Do you understand what is meant by **climate**, Nellie?" Mr. Cartmell asked, while George was arranging the lantern.

"No, Papa. Please tell me."

"The earth, you know, derives its heat from the sun; but Mr. Sol does not heat all parts equally. The part of the earth called Greenland, situated near the North Pole, we learned the

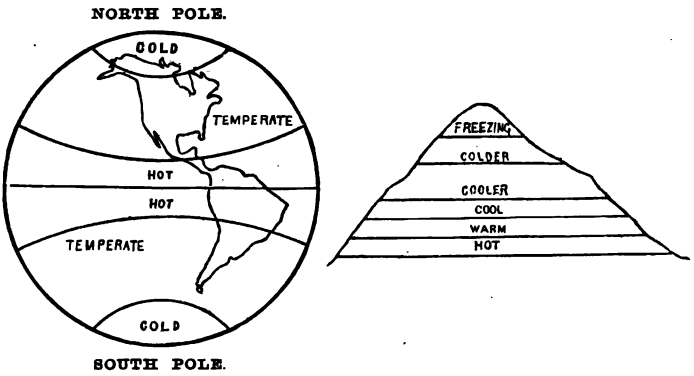


DIAGRAM OF ZONES.

other evening, is not warmed by the sun nearly so much as our own country. If we should travel farther south, starting from the north of Greenland, we should notice that it grew warmer and warmer day by day, till we had gone about one fourth of the way round the earth. This warmest part of the earth is at the equator, and

the land on each side of it is the hot belt.

"I have indicated this on a map, which is the first picture shown us.

"The countries on each side of the equator are very hot, because the sun's rays strike there so directly.

"**Climate** is the general state of the weather throughout the year, and it depends principally on the amount of heat and rain. The amount of heat depends largely on the distance from the equator, or the height above the sea-level.

"When a traveller ascends from the low tropical plains of the hottest parts of the earth to the summit of one of the highest mountains, he finds that he gradually passes through nearly the same changes in climate that another traveller would have to endure in a long land journey from the equator to the polar regions. Hence the amount of heat also depends upon the height above the sea. This is indicated in the figure on the right of the first picture.

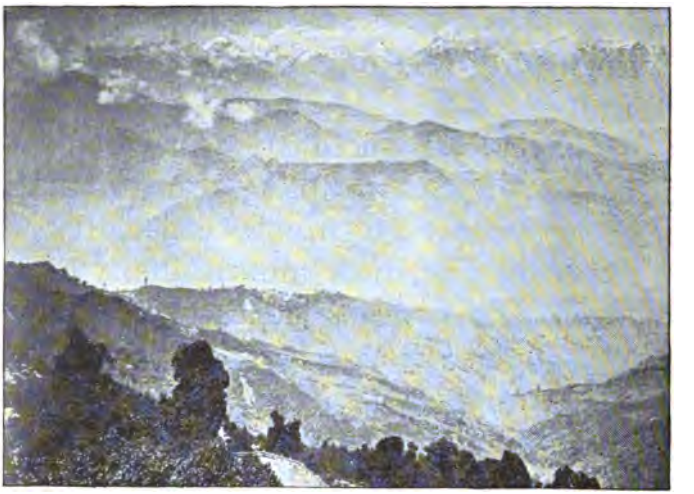
"Last week we talked about **frigid** Greenland," continued Mr. Cartmell. "Since then we have realized how cold it can be on New Year's in a **temperate** country. To-night we shall learn some interesting facts about **India**, situated near the equator in the **torrid** belt, and on the other side of the world. Who can tell us something about the **climate** of India?"

"I have read," said Miss Gray, "that the heat in India, during nine months of the year, is very intense, especially at the base of the high mountains, which keep off the cooling north winds, and permit hot winds to sweep over the land from another point of the compass. These hot winds are said to blow like a blast from a furnace. Nearly all of the country is constantly under the burning influence of the vertical rays of the sun.

"In many places there is a great amount of rainfall in the rainy season. At this time the water is carefully stored in great tanks to use in the dry season. During three months of the

year it is cool and delightful. The country is so large, that there is of course great variety of climate in different parts, just as there is in the United States."

"This country has some very wonder-



HIGHEST MOUNTAINS IN THE WORLD.

ful **mountains**," Mr. Cartmell remarked. "Can you tell us about them, Fred?"

"Yes, sir; they are on the northern side, and some of the peaks are five miles high, or more than four times as high as any mountain near our home.

The tops are covered with snow and ice all the time, although it is so very hot at their base. Those living in the hot parts of the country can sometimes see these snow-capped peaks standing out like clouds in the sky.

"Many of the people in this country are obliged in the hot season to give up their work, and go for a long vacation to the high hills and the sides of the mountains, where it is much cooler.

"It is next to impossible to cross these mountains, as the lowest passes are higher than the highest mountain in North America. This lofty range is called Himalaya, which means 'abode of snow.' The highest peak is called Mount Everest, but the natives call it by a word which means 'the Mount of God.'"

"Has Nellie anything to read us about Hindu **children?**"

"Yes, Papa; I have found a few things. One writer says: 'At six months old the Hindu baby gets his first dish of rice, in the presence of all his friends and relatives, who have a feast, of course, to cele-

brate the event. At three years of age the boy has his head shaved, excepting one tuft of hair on the back. At this time the priest comes to touch the head in five places with Cusa grass. Then

PARSEE BOYS AND GIRLS IN INDIA.

all these friends and the priest have another feast.

"'Thus far the Hindu child has not been troubled with clothes. He may have them, but they are not needed in so warm a country. He is, however, frequently almost entirely covered with jewelry.

"'The Hindu girl is called Larkee. Her doll is made of wood, painted every color of the rainbow, and much time and attention are given to it, even by the parents. The boys have for toys, kites, bows and arrows, marbles, and tops. Their games are like ours, — Puss-in-the-corner, hide-and-seek, blindman's-buff, etc.'

"Another writer says: 'The Parsees form about one tenth of the population in some cities in India. They are merchants, and very wealthy. Their children are well dressed, and attend school regularly. The girls are pretty as pinks, — brown-hued pinks, we may say, as most of their complexions are brown. Their heads are covered with gold-embroidered caps, and the rest of the dress consists of loose trousers, with a white or embroidered frock. The Parsee girls, unlike their Hindu sisters, attend school and learn to give recitations and songs as well as the best American children.'"

"What have you learned, Florence, about the Hindu schools?"

"They are usually held out of doors, under a tree or a thatched shed. The climate is so warm, the children and the teacher wear as little clothing as possible. The teacher is always a man,—a Brahmin, or priest. Teacher and pupils sit on the floor.

TEACHER AND SCHOLARS.

"Girls do not usually go to school. The boy begins his education at the same age as in this country. On the day appointed for him to begin his school life, if it be a lucky day according to the Hindu almanac, the child bathes and puts on a new garment. His pa-

rents first take him to a place of worship, and gifts of rice and money are presented to the goddess of learning.

"After this he is taken to the master of the school. The teacher receives for his tuition two cents a month.

"He is first taught the letters of the alphabet, not by saying them, but by writing them in the sand with a sharp-pointed stone. Five letters make one lesson. After he can write on the ground, he is taught to write on palm-leaves with ink and a wooden pen, or a short rod of iron called a stylus, and finally on paper. At every stage of his progress the boy makes presents to his teacher.

"The school begins very early in the morning. At eleven o'clock the boys go home for breakfast; they return at two, and remain in school until evening.

"The children study their lessons aloud, and always recite in concert, swaying the body backward and forward. The boy who recites the loudest and sways the most vigorously is said to be the smartest boy. An hour before

they are dismissed from school they repeat together the multiplication table and the alphabet. A boy is educated when he has committed to memc certain books.

"They have cruel punishments for the boys. The last boy to reach school has frequently to stand on one leg for hour. A truant is obliged to stand one leg for the same time, and to h up a brick in his right hand, while the other boys may laugh at him. Another punishment is to put on the back a leaf which burns the skin.

"In some of the large cities the Hindu boy when he is six years old is sent to the government schools, to learn English."

"You have given us a very good account, Florence," said Mr. Cartmell, showing in the tone of his voice great pride in his daughter's effort.

LANGUAGE LESSON.

Write about the Hindu boy. The Hindu girl. The Hindu school.

LESSON VI.

A HOT COUNTRY.

PART II.

"Is Miss Gray ready to tell us something about the Hindu **women**?" asked Mr. Cartmell.

"The women of India have slender and graceful forms. Their complexions are brown, and their faces are shaped like those of the women in this country, for they belong to the same race."

"How do they dress, Miss Gray?" asked Florence.

"The poorer women make a **dress** out of a piece of cloth eight or nine yards long, which they throw over the right shoulder, and wind and fold about their bodies in a very skilful manner, so as to make it hang about them gracefully. One end of the cloth is thrown over the head for a cape or bonnet. They do not wear bonnets as we do.

"The richer women generally wear a close-fitting jacket without sleeves, and over this a looser jacket. They wear

trousers which are made of satin or silk, very wide at the ankles. They never

HINDU WOMEN.

wear slippers in the house, and they do not know what stockings are.

"Hindu women are very fond of jewelry. They wear as much as they possibly can. They always have rings on

their fingers and toes. Do you see why they do not care for stockings? They usually wear silver bells on the ankles, which ring as they move about, heavy silver or gold bracelets on the arms, jewels in the hair, strings of beads around the neck, jewels in the ears, and frequently, if married, a ring two inches in diameter in the left nostril.

"The two women in the picture wear a small cup-shaped object of gold, called a 'tinka,' which is stuck on between the eyebrows."

"The men," added Mr. Cartmell, "usually wear a turban, which is made of several yards of bright-colored muslin, skilfully wound about the head so that it will remain in place. The rest of their garments are usually white. Fashions in India seldom change."

When George showed the picture of a Hindu **kitchen**, Mrs. Cartmell remarked:—

"A family in India has a great many servants, each trained to do only one thing. Most families have a head cook, who has an assistant. The floor is

made of polished wood or stone. The servants when at work sit cross-legged, or on their haunches like a dog.

"This cook in the picture is peeling

A HINDU KITCHEN.

potatoes, but he holds the knife with his toes. He has beside him a curious little stove with a charcoal fire burning in it. There is a chance for only one pot at a time on the stove.

"Their food is of the simplest kind, consisting for the most part of vegetables and fish, with a little milk and ghee (oil used for butter), but no eggs or meat of any kind. It is prepared in the simplest manner, and never richly spiced. Sometimes the wives cook some delicacy for their husbands.

"Hindu men and women never eat together. Women take their meals after the men have finished. The choicest part of the food is given to the men, and the rest is kept for the women. This is a part of their religion.

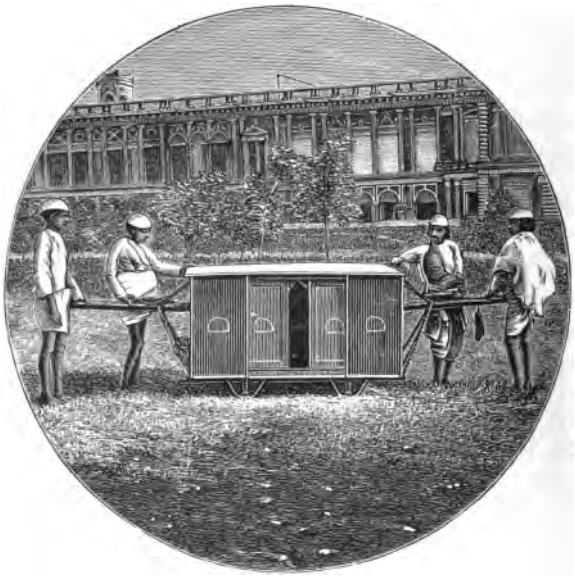
"Can George tell us any interesting facts about the way the people of India travel?"

"The English have built a great many railroads, and these are used to a great extent, even by the poor people, especially for long distances. Where we use horses and carriages, the Hindus use palanquins and oxen."

"What is that first thing you mentioned?" inquired Florence.

"A **palanquin** is nothing more nor less than a box hung on a long pole.

Sometimes it is handsomely carved, but usually it is very plain, and rarely upholstered farther than to have a soft bamboo mattress spread over the floor,



A PALANQUIN.

and pillows on which to rest the head when the traveller lies down.

"It is only high enough for a person to sit in. At one end there is usually a little closet for books or a lunch. It is lifted by the pole, and supported on the shoulders of four men,

who can carry a person a long distance in the course of a day. The bearers often sing as they travel. Some one says their song is usually, 'He, he, he! Ho, ho, ho!'"

A BULLOCK-CART.

"How are the **oxen** used?" Fred asked.

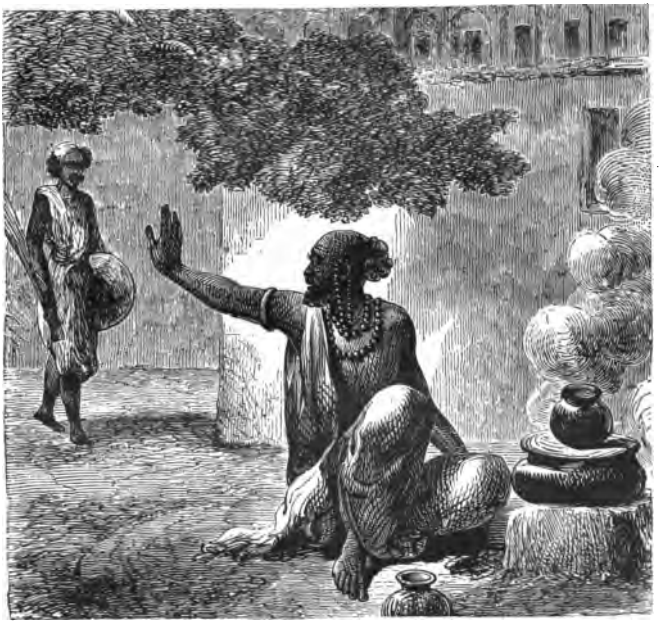
"They are used in India in very much the same way as we use horses in America. They draw the carriage when a person takes a long ride. The oxen do not have on harnesses, but the centre pole of the carriage is fastened to the unique yoke. The reins are fas-

tened to a ring in the nose of each ox, and the driver sits on the front of the carriage.

"The carriage has four heavy wheels, and there are no springs; the top of the clumsy body is dome-shaped, like a little temple, with four arches. The passengers sit or recline on cushions. These Hindu bullocks are the hump-backed kind, or zebu, and usually white in color. They can easily travel thirty miles a day. On account of the heat, journeys are usually taken in the night."

"India differs from our country in one other point," said Mr. Cartmell, when George displayed the next picture. "Everybody belongs at birth to one of four classes or **castes**. He is born a workman or a merchant, and cannot easily change from one order to the other. The lowest caste is a workman, such as a tailor or a goldsmith. Next come the merchants and farmers; above these in rank are the soldiers, and first of all is the caste of the Brahmins or priests. Every act of a Hindu's life is ruled by the laws of his caste.

"The Brahmin may be very poor, but he is always extremely proud. He walks about with a white cord around his neck, and he expects every one to



A BRAHMIN COOKING.

show him due respect. He may be so poor as to be obliged to become a cook in the kitchen of a rich merchant, but even here he will strut about, give himself airs, and quite look down upon his master.

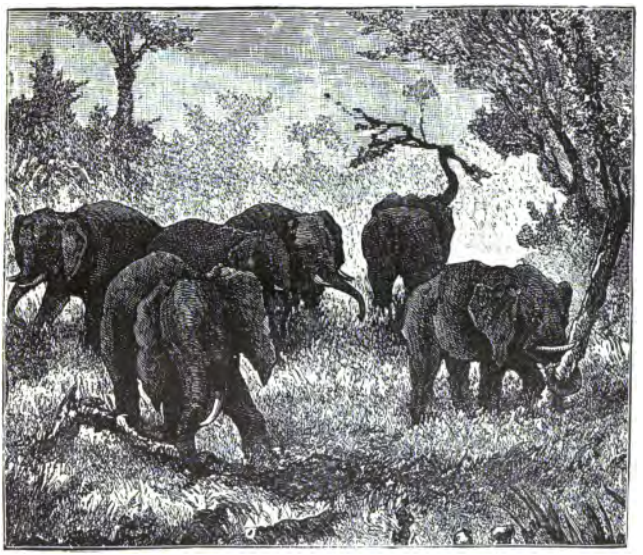
"The man in the picture is cooking his dinner of rice. He is greatly afraid the other man, who is of a lower caste, will come near him, and thus spoil his dinner. He looks as if he were saying, 'Stand by, for I am holier than thou.'

"Fred, I believe, is anxious to tell us something about one of the characteristic animals of India."

"I think one of the peculiar animals of India is the **elephant.** We have all seen this animal in the streets when the circus and menagerie come to town. He is much larger than a horse, being frequently nine or ten feet high. He has straight legs like columns, round feet with no proper toes, a large round head, immense ears, small eyes, long tusks of ivory, and a trunk.

"The trunk is the elephant's hand and arm. It is by this that he gets his food and drink. The elephant has scarcely any neck, because so large a head could not be carried at the end of a long neck.

"He liyes on the leaves of trees or young twigs, and even on the bark and wood of small branches. Such food is mostly found high above his head.



WILD ELEPHANTS.

Grass and other herbs which grow on the ground are also eaten by him, but he could not reach them without his trunk.

"The elephant can turn and twist his trunk in any way he pleases. He can wind it round young trees and root them up. He can reach up to high

branches and tear them down. He can take up and carry any kind of food from the ground to his mouth, and even pick up a needle or a piece of bread. When he wishes to drink, he sucks water into his trunk, which is hollow, and then pours this water down his throat. He loves to bathe.

"The elephant prefers a warm country. In some parts of India vast herds of wild elephants still roam about in the forests.

"He is gentle by nature, and can be easily trained, and so made a useful servant to man; but first he must be caught alive.

"Men skilled in the work of catching and taming elephants go out into the forest where wild elephants abound, taking with them tame elephants, which know very well what their masters intend, and know how to help them. The tame elephants go near the wild ones, and try to keep them from seeing what the men are doing.

"The men thus manage to fasten ropes or thongs round their legs and

tie them to trees. The animals, on finding themselves caught, become furious. They pull with all their might, throw

A PROCESSION IN INDIA.

themselves on the ground, twist and turn about in all ways, tearing up the ground with their tusks.

"Sometimes the struggle lasts for days; but all in vain. When the animal is worn out with his struggles, as well

as by hunger and thirst, the men return with the tame elephants, which comfort the captives, and afterward help in training them in their duties.

"The tame elephants are taught to do all that horses can do, both in peace and war.

"They are used for carrying persons from one part of the country to another, and also in hunting and in battle. They are always seen on grand occasions in processions. They are made to plough and draw carts.

"In some lumber-yards they are very useful in piling up boards and heavy timbers, which they do as well as men. The man who drives the elephant is called the 'mahout,' and the seat fastened to the back of the beast, the 'howdah.' Horses have great fear of elephants, and are apt to shy when passing even a tame one."

"India is so great a country," said Mr. Cartmell, after Fred finished, "I think we can profitably spend another evening in studying it." (See Vol. III.)

THE END.

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